Public Health Department.

ANNUAL REPORT

ON THE HEALTH OF THE

West Lancashire Rural District

DURING THE YEAR

1937

With Observations on 1938

BY

HERBERT E. HARSDEN, M.D., C.B., D.P.H.

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BY

HERBERT E. MARSDEN, M.B., Ch.B., D.P.H.

Of Gray's Inn, Barrister-at-Law,
Justice of the Peace for the County of Lancaster.

Medical Officer of Health.

LIVERPOOL:
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The West Lancashire Rural District Council.

1937.

CHAIRMAN: ALFRED BIRCH.
VICE-CHAIRMAN: WILLIAM LEDSON.

AINTREE	ARTHUR DAVENHILL.
ALTCAR	REV. J. A. JONES.
AUGHTON	R. A. LEWIS.
,, ...	ARTHUR C. ROODHOUSE, J.P
,, ...	C. H. C. SKAFTE.
BICKERSTAFFE	JAS. ALCOCK.
,, ...	JAS. HEYES.
BISPHAM	JOHN HARRISON.
DOWNHOLLAND	JOB SUMNER.
FORD	ALFRED BIRCH.
HALSALL	THOS. J. HIGSON.
,, ...	JOHN HARRISON.
HESKETH-WITH-BECCONSALL ...	JOHN TAYLOR.
INCE BLUNDELL...	CHAS. F. KUHL.
LYDIATE	ALFRED COLLINS.
MAGHULL	P. SEIFFERT.
,, ...	S. H. HUDSON.
,, ...	H. STAFFORD MORETON.
MELLING	A. F. WEAVER.
NETHERTON	E. M. HOUGHTON.
,, ...	F. V. KING.
NORTH MEOLS	ROBERT BALL.
,, ...	PETER TAYLOR, SNR.
RUFFORD	HARVEY HAIGH.
SCARISBRICK	DR. T. B. CALLAND, J.P.
,, ...	A. A. HOWARD.
SEFTON	R. S. MUSKER.
,, ...	JOHN ALMOND.
SIMONSWOOD	WILLIAM LEDSON.
TARLETON	ROBERT LATHAM, J.P.
,, ...	PHILIP BARRON, C.C.
THORNTON	R. F. ALMOND.

WEST LANCASHIRE RURAL DISTRICT.	
NUMBER.	PARISH.
1	HESKETH.
2	NORTH MEOLS.
3	TARLETON.
4	SCARISBRICK.
5	RUFFORD.
6	BISPHAM.
7	HALSALL.
8	DOWNHOLLAND.
9	AUGHTON.
10	BICKERSTAFFE.
11	LYDIATE.
12	ALTCAR.
13	MAGHULL.
14	MELLING.
15	SIMONSWOOD.

SEFTON RURAL DISTRICT	
16	INCE BLUNDELL.
17	THORNTON.
18	LUNT
19	SEFTON.
20	FORD.
21	NETHERTON.
22	AINTREE.

AREA TAKEN OVER BY ORMSKIRK U.D.C.

SHOWN THUS

SCALE OF MILES.

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HEALTH COMMITTEE.

Dr. T. B. Calland (Chairman). R. A. Lewis (Vice-Chairman).

All Members of the Council.

HOSPITAL COMMITTEE.

Job Sumner (Chairman). C. H. C. Skafte (Vice-Chairman).
R. A. Lewis, Dr. T. B. Calland, Rev. J. A. Jones, A. C. Roodhouse, Jas. Alcock, S. H. Hudson, P. Seiffert, F. V. King, A. Davenhill, J. Taylor, C. F. Kuhl, A. Birch and W. Ledson.

STAFF OF PUBLIC HEALTH DEPARTMENT.

Medical Officer of Health—

H. E. MARSDEN, J.P., M.B., D.P.H., Barrister-at-Law.

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J. AINSWORTH, M.S.I.A.
N. T. FENNAH, M.S.I.A.

Clerk to Medical Officer of Health—

Miss D. ROSCOE.

All are whole-time officials.

INFECTIOUS DISEASES HOSPITAL.

Medical Superintendent—

H. E. MARSDEN, J.P., M.B., D.P.H., Barrister-at-Law.

Deputy Medical Superintendent—

C. F. H. SERGEANT, M.B., M.R.C.S.

Matron—

Miss A. FAIRHURST, S.R.N.

[To the Chairman and Members of the Health Committee].

Gentlemen,

I have pleasure in presenting to you my Annual Report upon the health of the District for the year 1937.

The population shows a progressive increase; the Registrar General's estimate at the middle of 1937 being 32,350, an increase of 1,780 over the figure for the previous year.

Building development continues apace and is providing accommodation for persons moving into the Rural Area from the towns.

The birth-rate shows an increase of .3 per 1,000 over the figure for 1936; the figure for 1937 being 15.2 per 1,000. This represents an increase of 1.7 per 1,000 over the average for the five years 1932-36.

The death-rate shows an increase to 12.0 per 1,000 of the population as compared with 10.5 for 1936.

Incidence of infectious disease upon the increased size of the population has not been unduly large. The severity in type of Diphtheria, however, has given considerable cause for alarm.

The general health of the District throughout the year has been good. There have been no unusual circumstances giving rise to any particular form of invalidity.

I would again express my thanks to my colleagues in other departments and to the staff of the health department for their support and devotion to duty.

Yours obediently,

(Signed) H. E. MARSDEN,

Medical Officer of Health.

May, 1938.

Section A.

STATISTICS AND SOCIAL CONDITIONS OF THE AREA.

SOCIAL CONDITIONS.

Great changes are taking place in West Lancashire, and each year as it passes sees the District more and more urbanised, and a corresponding change in the social conditons of the population.

But modernisation, which in the southern area has brought large tracts of agricultural land under the hand of the builder, has in other parts, by the introduction of improved pumping plant, brought many acres of waste land under cultivation.

The exodus from the large towns continues, and with it building proceeds apace and urban services are provided.

Water mains and sewers have been increased extensively in the urban townships and most noteworthy is the provision of the sewerage scheme for the area which was administered until 1932 by the late Sefton Rural District Council. This scheme was officially opened in the early part of 1937 and is described later in the Report.

Aintree and Netherton adjoin the City of Liverpool, and to the uninitiated it is impossible to define the boundary. The inhabitants are in part employed in the City and in part in the factories in their own area.

The more important of these factories deal with the manufacture of artificial silk, tin boxes, wood mouldings, concrete goods, zinc and galvanised iron goods, soap and candles, cooked food, plain and printed wax papers and flour. A notable addition in 1935 was a "Football Pools" factory with 1,390 operatives. There are also motor works, laundries, lithographers' and boxmakers' factories.

Further north is the completely transformed township of Maghull. A few years ago this was an agricultural parish with a small residential area adjoining the railway station. Now it is rapidly being built up with modern houses, shops, lighting and communications.

The opening of a fine arterial bye-pass road at the end of 1934 has further augmented development, as building proceeds apace along both sides of it.

There were 1,724 inhabited houses in Maghull at the end of 1937, as against 1,224 in 1936, 1,105 in 1935 and 374 in 1926. In addition there were 318 houses which were not occupied. The whole of the district is now adequately provided with road and rail transport services.

Thornton also is developing rapidly. It adjoins the Urban District of Great Crosby, and in its southern half is now almost entirely residential.

Sefton, except for a flour mill, is mainly an agricultural parish. Many acres used to flood in winter, but with improved pumping facilities and the deepening of the Alt, all this land has been reclaimed and is now farmed.

Building operations have necessitated the provision of a sewerage scheme in Lydiate. Here again is a colony of City workers implanted in a purely agricultural parish.

In the Parish of Ford, adjacent to the Litherland Urban District Council's boundary, residential development has been commenced and when the Rimrose Brook Sewerage Scheme has been completed this will be accelerated. Forty-two new houses were completed during 1937.

In Aughton, from Town Green to Ormskirk, a distance of some two miles, the area has for many years been semi-urban in character, not as a result of ribbon development, but because of a curious scattered layout of moderately large houses. Sites have been selected on hills overlooking the Mersey, notably at Granville Park and in various parts of Clieves Hills and Aughton Moss. Latterly, some ribbon development has taken place along the main Liverpool-Ormskirk Road. A Potato Crisps factory now employs thirty-seven male and fifty-six female operatives.

A small basket--making industry is carried on in Bispham and Rufford. Rufford has a station on the Liverpool to Preston main line, and the adjacent village is the principal housing centre in this part of the district.

In Scarisbrick there are three densely populated areas: at the western end, adjoining the County Borough of Southport; and in the centre near Bescar Lane Station on the Southport and Wigan line; also at the eastern end, adjoining the market town of Ormskirk. Of recent years there has been a marked development of market gardening in Scarisbrick.

A furniture factory at Melling employs a staff of 312. The site occupies 10 acres of land, with 4 acres of production buildings, and the weekly timber consignment adds up to 110 tons.

The Bickerstaffe Colliery is now closed down. Many young married people with children are living away from Bickerstaffe in order to obtain work in the manufacturing districts of Lancashire. There is much less agricultural work available than formerly because of the introduction of machinery. The size of families generally is noticeably smaller.

Development in Hesketh and Tarleton continues. A scheme of sewerage in Tarleton was completed during 1935.

Scavenging schemes are now in operation in both townships.

There are upwards of 300 supplies of water to glass houses in the two townships. There has been a considerable increase of the area under glass from which growers annually produce quantities of spring flowers, followed by tomatoes and cucumbers. Market gardening is gradually becoming the main industry of this part of the District. It may be of interest to note that it is fifty-seven years since the industry commenced with the erection of the first glass house.

Poultry farming is now a thriving industry in these parishes, and there is a small brickworks at Hesketh Bank.

Work re-started during 1934 at the Tarleton Weaving Mill. There are approximately 186 operatives, of whom 114 are resident in the Rural District.

Farming and market gardening are carried on to some extent in Banks, but the majority of the workpeople of the village are employed outside the district. The fishing industry now carried on is practically nil, but the establishment during 1935 of the new mussel purification tank at Lytham has provided employment for a few Banks fishermen.

The following table and information regarding boundaries has been supplied by the Local Office of the Ministry of Labour, and is re-printed to show the state of unemployment during the year. Unemployed persons from the Rural District are included in the figures for each Local Office.

MINISTRY OF LABOUR. NORTH WESTERN DIVISION.

Statement showing, for certain Local Offices and Juvenile Employment Bureaux in the North Western Divisions, the numbers unemployed and registered at 13th December, 1937 and 14th December, 1936.

Local Office.	13th December, 1937.					14th December, 1936.				
	Men.	Boys.	Women.	Girls.	Total.	Men.	Boys.	Women.	Girls.	Total.
Bootle	3471	368	1287	134	5260	3799	567	1522	255	6143
Croston...	168	8	379	14	569	93	1	38	2	134
Liverpool (Walton) ...	5728	—	954	—	6682	5700	—	851	—	6551
Ormskirk	1090	28	224	48	1390	988	32	182	29	1231
St. Helens	5122	116	428	179	5845	5877	274	433	192	6749
Southport	2401	48	738	63	3250	2314	42	704	30	3090
Wigan	7904	174	2106	200	10384	8645	260	1425	150	10480

BOUNDARY OF SOUTHPORT EMPLOYMENT EXCHANGE.

Commencing from the Ribble Estuary at the point where the Parish of North Meols meets the Parish of Hesketh-with-Becconsall, and continuing southward along the North Meols boundary to the point where the Parishes of North Meols, Tarleton and Scarisbrick meet. Thence westerly along the boundary between the Parishes of North Meols and Scarisbrick to the Southport County Borough Boundary. Thence to Kew Gardens Station and following the railway line through Shirdley Hill, Downholland and Altcar to Lydiate. Thence in a South-westerly direction to the point where the Parishes of Altcar, Lydiate and Maghull meet, and following the southern boundary of the Parishes of Altcar and Ince Blundell to the point on the coast where the Parish of Altcar meets the boundary of Little Crosby.

In brief, the Southport Employment Exchange covers the whole of the area of the County Borough of Southport and the Urban District area of Formby, and the following Parishes in the area of the West Lancashire Rural District Council: Altcar, Ince Blundell, North Meols, and the westerly portion of the Parishes of Downholland, Halsall and Scarisbrick.

BOUNDARY OF ORMSKIRK EMPLOYMENT EXCHANGE.

Commencing from the point where the Parishes of North Meols, Tarleton and Scarisbrick meet, and then following the Tarleton boundary in a south-easterly direction, continuing along the boundary between Rufford on the one side and Lathom and Burscough on the other side. Thence following the easterly boundary of the Lathom and Burscough area to the boundary between Dalton on the east and Lathom and Burscough on the west. Thence following the easterly boundary of Skelmersdale U.D.C. to the Upholland U.D.C. boundary. Thence following the boundary between Skelmersdale and Upholland to the boundary of Bickerstaffe. Thence following the boundary between Bickerstaffe and Rainford to the L.M.S. Railway line (Liverpool, Bolton and Bury line). Thence following the railway line to the easterly extremity of the Aintree Racecourse. Then following the road to the North of the Aintree Racecourse through Netherton, Sefton and Thornton to the boundary of the Southport Exchange immediately south of Ince Blundell Hall.

In brief, the Ormskirk Employment Exchange cover the whole area of the Urban District of Ormskirk, the Urban District of Skelmersdale, and the following Parishes in the area of the West Lancashire Rural District Council: Aughton, Bickerstaffe, Lunt, Lydiate, Maghull, Melling, and portions of the Parishes of Aintree, Downholland, Halsall, Kirkby, Netherton, Sefton, Scarisbrick Simonswood and Thornton.

VITAL STATISTICS FOR 1937.

Area of the District	67,446 acres.
Estimated resident population (middle of 1937)	32,350
No. of inhabited houses (end of 1937) according to Rate Book	9,663
Rateable Value	£192,078
Sum represented by a Penny Rate	£800
Births	494
Birth Rate	15.2
Deaths	389
Death Rate (crude)	12.0
Death Rate (adjusted) (comparability factor 1.02)	12.2
Infantile Mortality	58 per 1,000 births.
Zymotic Death Rate (7 principal zymotics) ...	.12 per 1,000.
All forms of Tuberculosis (including Phthisis) ...	0.43 per 1,000.

BIRTHS.

The number of births recorded during the year was 494, equal to a rate of 15.2 per 1,000 of the population. This is an increase of .3 on the figure for 1936 and an increase of 1.7 over the five years average 1932-36.

Of the total births 264 were males and 230 females. There were 12 illegitimate births—9 males and 3 females.

DEATHS.

The total deaths registered for the Rural District during 1937 numbered 389. This figure was arrived at after deducting deaths of non-residents who died chiefly in institutions, etc., and adding those of residents dying outside the district. The figure for 1936 was 322.

The death-rate for the year was thus 12.0 per 1,000 of the population, and the adjusted death-rate, after multiplying by the comparability factor for the district (1.02) is 12.2 per 1,000. This is an increase of 1.5 on the figure for 1936 and an increase of .8 on the five years average 1932-1936.

Maternal Mortality.—The maternal mortality rate per 1,000 live births was 4.04 against 6.55 in 1936. The figure for England and Wales was 3.23 and 3.81 in 1936.

Zymotic Death Rate.—The seven principal zymotic diseases, as defined by the Registrar-General are :—Smallpox, measles, scarlet fever, diphtheria, whooping cough, " fever " (i.e., typhus, enteric fever and simple continued fever), and diarrhœa. Of these diseases, enteric fever mortality is, perhaps, the best test of sanitary conditions, caused as it is by specific contamination of soil and water by excreta ; whilst diarrhœa with its special incidence in young children, is notably associated with insanitary surroundings.

Four deaths were registered during the year as being due to zymotic disease, giving a zymotic death rate of .12 per 1,000.

Epidemic Death Rate.—This was .06 per 1,000. Diarhœa is not included in calculating the figures for the epidemic death-rate.

Infantile Mortality Rate.—There were 29 deaths of infants under one year, which gives an infantile mortality rate of 58 per 1,000 births. This figure is 13 more than the figure for 1936 and 7 less than the five years average.

The following is a comparison of the foregoing rates for England and Wales :—

	Birth Rate per 1000 living	Death Rate per 1000 living	Epidemic Death Rate per 1000 living	Infantile Mortality Rate per 1000 births
England and Wales ...	14.9	12.4	.023	58
West Lancashire Rural District	15.2	12.0	.06	58

TABLE 1.

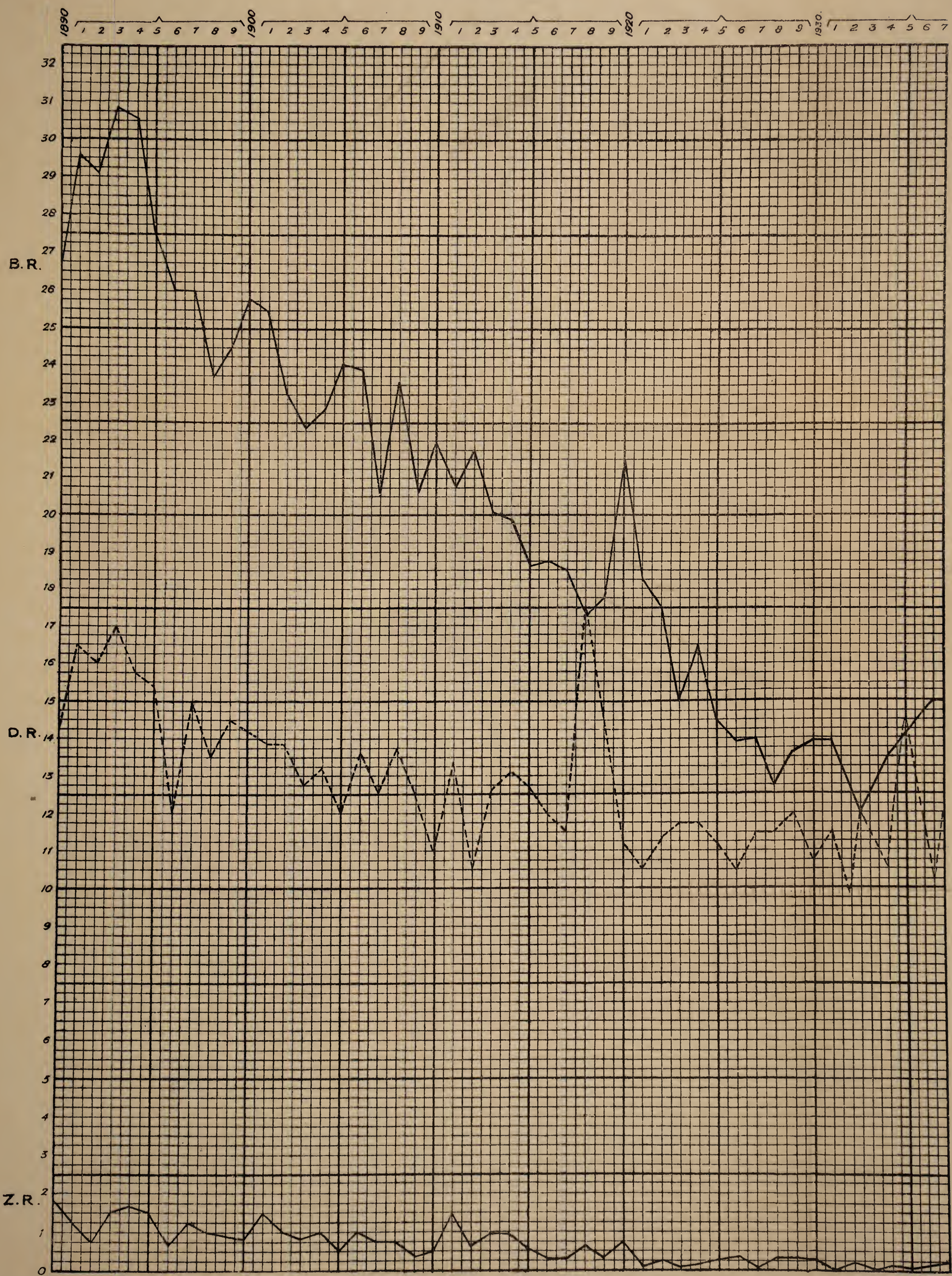
Showing birth rates, death rates, epidemic death rates, and infantile mortality rates for the West Lancashire Rural District since 1910, compared with England and Wales:—

Year	Birth Rates		Death Rates		Epidemic Death Rates		Infantile Mortality Rates	
	England & Wales	West Lancashire	England & Wales	West Lancashire	England & Wales	West Lancashire	England & Wales	West Lancashire
1910	24·8	22·09	13·4	10·99	·99	·52	106	77
1911	24·4	20·76	14 6	13·51	—	1·48	130	104
1912	23·8	21·73	13·3	10·52	—	·63	95	67
1913	23·9	20·11	13·4	12·56	—	·88	109	94
1914	23·3	19·81	13·6	13·03	—	·87	105	127
1915	21·9	18·95	14·8	12·66	—	·64	110	65
1916	12·6	18·72	14·0	11·85	—	·52	91	64
1917	17·8	18·49	14·4	11·4	·61	·26	97	75
1918	17·7	15·3	17·6	17·7	·77	·67	97	80
1919	18·5	17·8	13·8	16·8	34	·31	89	86
1920	25·4	21·6	12·4	10·9	—	·79	80	50
1921	22 4	18·2	12·1	10·4	—	·18	83	66
1922	20 6	17·4	12·9	11·3	·47	·23	77	64
1923	19·7	15·0	11·6	11·7	·35	·09	69	58
1924	18 8	16·4	12·2	11·9	·31	·13	75	58
1925	18·3	14·5	12·2	11·5	·39	·23	75	58
1926	17·8	13·9	11·6	10·5	·29	·31	70	70
1927	16·7	15·4	12·3	11·3	27	·04	69	49
1928	16·7	12·8	11·7	11·4	·26	·13	64	44
1929	16·3	13 6	13·4	12·0	·41	25	74	59
1930	16·3	13·5	11·4	10·8	·27	·17	60	49
1931	15·8	13·7	12·3	11·6	·38	·04	66	74
1932	15·3	12·28	12·0	9·6	·23	·22	65	59
1933	14·4	12·0	12 3	11·9	·18	·11	64	88
1934	14·8	13·3	11·8	10·6	·06	·14	59	66
1935	14·7	14·5	11·7	13·8	·02	·13	57	67
1936	14·8	14·9	12·1	10·5	·45	·15	59	45
1937	14·9	15·2	12·4	12·0	·02	·06	58	58

WEST LANCASHIRE RURAL DISTRICT.

BIRTH RATE. DEATH RATE & ZYMOTIC DEATH RATE.

1890 - 1937.



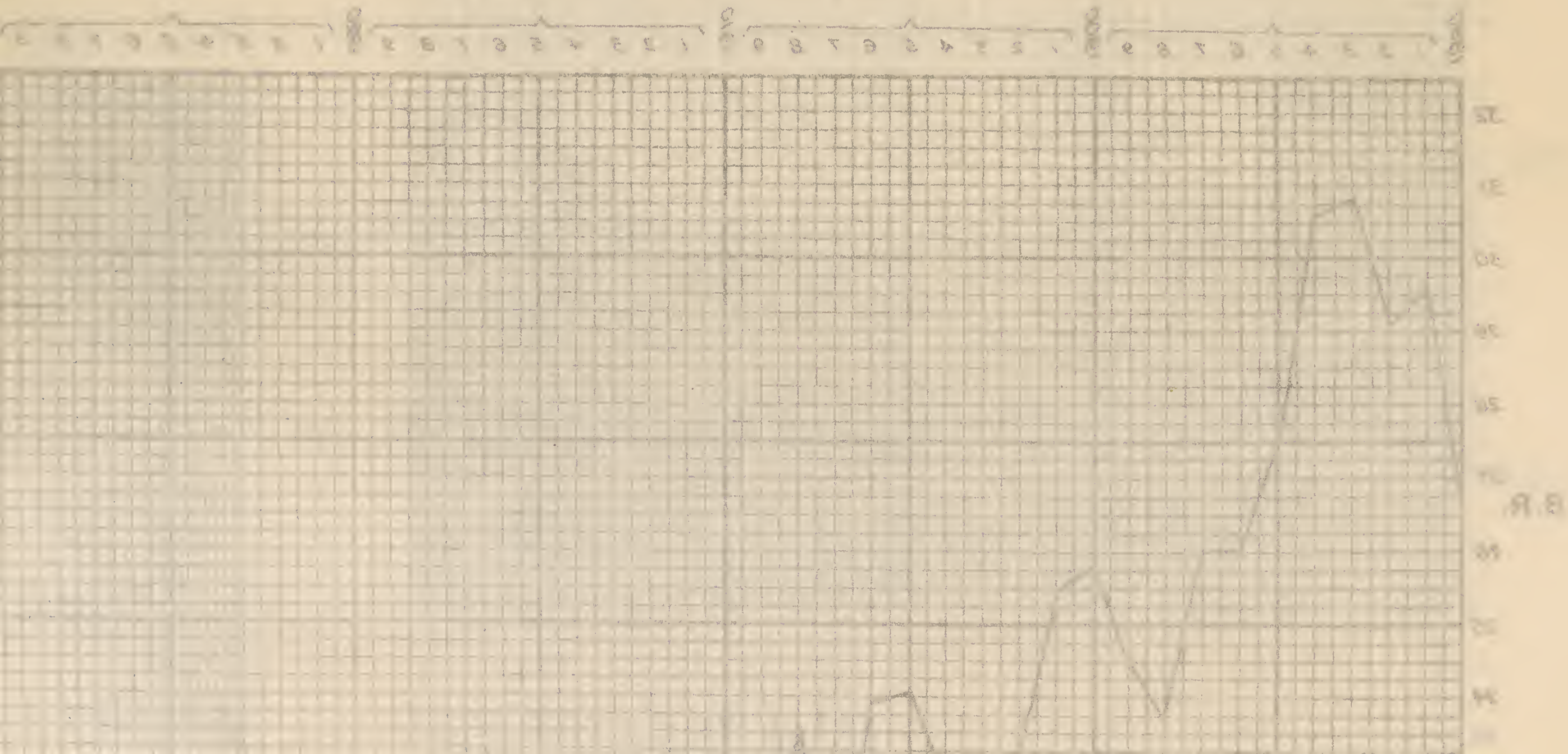


TABLE 2.

BIRTHS AND DEATHS IN TOWNSHIPS.

The following table shows the population, number of births and deaths, and the rates per 1,000 in each township in the Rural District for the year 1937:—

Townships	Estimated Population middle of 1937	Births		Deaths	
		No. of Births	Rate per 1000	No. of Deaths	Rate per 1000
Aintree	1188	36	30 3	10	8·4
Altcar	613	6	9.8	8	13·0
Aughton	2747	32	11·6	40	14·5
Bickerstaffe	1303	23	17·6	19	14·5
Bispham	224	5	22·3	3	13·4
Downholland	594	4	6·8	12	20·2
Ford	368	4	10·9	3	8·2
Halsall...	1925	25	12·9	18	9·3
Hesketh Bank ...	1621	28	17·2	21	12·3
Ince Blundell	476	6	12·6	6	12·6
Lydiate	1356	21	15·5	15	11·1
Maghull	5731	74	12·9	56	9·8
Melling	1269	17	13·4	15	11·9
Netherton	2805	67	23·8	17	6·1
North Meols	2388	45	18·8	40	16 7
Rufford	902	5	5·5	13	14·4
Scarisbrick	2554	37	14 5	37	14·5
Sefton	415	10	24·1	6	14·4
Simonswood	312	4	12·8	4	12·8
Tarleton	2458	36	14·6	32	13·0
Thornton	1101	9	8·1	14	12·6
Whole District ...	32350	494	15·2	389	12·2

It is noteworthy that in the rapidly developing parishes the death rate is extremely low, while in the parishes where development is apparently at a standstill, the death rate is high.

Conversely, the birth rate is high in growing parishes, low where there is little development.

TABLE 3.

CAUSES OF DEATH IN THE WEST LANCASHIRE RURAL DISTRICT, 1937.

CIVILIANS.

Causes of Death.	Males.	Females.
Typhoid Fever, etc....	—	—
Measles	—	—
Scarlet Fever	—	—
Whooping Cough	—	1
Diphtheria	1	—
Influenza	13	6
Encephalitis Lethargica	1	1
Cerebro-spinal Fever	—	—
Respiratory Tuberculosis	5	8
Other Tuberculosis	—	1
Syphilis	1	—
General Paralysis of Insane, etc.	1	—
Cancer	18	26
Diabetes	2	4
Cerebral Hæmorrhage	6	14
Heart Disease	47	55
Aneurysm	1	1
Other Circulatory Diseases...	4	6
Bronchitis	4	6
Pneumonia (all forms)	12	6
Other Respiratory Diseases	—	1
Peptic Ulcer	3	—
Diarrhœa, etc. (under 2 years)	2	—
Appendicitis	—	1
Cirrhosis of Liver	—	—
Other Liver Diseases	—	1
Other Digestive ,, ...	3	5
Nephritis	7	8

Causes of Death.	Males.	Females.
Puerperal Sepsis	—	1
Other Puerperal Diseases	—	1
Congenital causes, etc.	9	10
Senility	12	8
Suicide	4	—
Other violence	16	6
Other defined causes	17	16
Ill-defined causes	4	3
Deaths of infants under 1 year:—		
Total	16	13
Legitimate	13	13
Illegitimate	3	—
Live Births:—		
Total	264	230
Legitimate	255	227
Illegitimate	9	3
Stillbirths:—		
Total	12	8
Legitimate	12	8
Illegitimate	—	—
Resident population estimated to middle of 1937		32,350

INFANTILE MORTALITY RATE PER 1,000 BIRTHS.

Aintree	0
Altcar	167
Aughton...	31
Bickerstaffe	0
Bispham	0
Downholland	250
Ford	250
Halsall	120
Hesketh Bank	0
Ince Blundell	0
Lydiate	95
Maghull	67
Melling	0
Netherton	45

Infantile Mortality Rate per 1,000 Births—(*continued*).

North Meols	89
Rufford	0
Scarisbrick	54
Sefton	0
Simonswood	250
Tarleton	56
Thornton	333
England and Wales	58
West Lancashire Rural District ...	58

LEGISLATION IN FORCE.

The Infectious Diseases Prevention Act, 1890, and the Public Health Acts Amendment Act, 1890, were adopted on February 4th, 1891.

By an order in Council dated September 14th, 1909, the Public Health Acts Amendment Act, 1907, was adopted, in so far as it applies to Rural Districts.

Sections 13 to 16, 20, 23, 25 to 34, 36 to 38, 40 to 43 and 45 to 50 of the Public Health Act, 1925, were adopted on the last day of that year.

By an order dated March 23rd, 1923, Sections 39, 40, 41 and 42, of the Public Health Acts Amendment Act, 1907, were adopted for the township of Aughton.

Section 50 of the Public Health Acts Amendment Act, 1907 (provision of ambulance), was adopted on December 6th, 1928.

New bye-laws have been adopted as follows:

New Street and Buildings, August 22nd, 1933.

Nuisances and Slaughter-houses, November 4th, 1925.

Offensive Trades, August 24th, 1925.

During 1931 the following new legislation came into operation:—

Rural District Councils (Urban Powers) Order, 1931.—Declaring the provisions of Sections 29-42 of the Public Health Acts (Amendment) Act, to be in force in Maghull.

West Lancashire Rural (Urban Powers) Order (No. 2) 1931.—Declaring the provisions of Section 25 of the Public Health Act, 1875, in Maghull. (Penalty of building houses without drains in an Urban District.

West Lancashre Rural (Urban Powers) Order, 1931.—Declaring the provisions of Section 1661 (Lighting of Streets, etc.) of the Public Health Act, 1875; to be in force in Hesketh-with-Becconsall, Rufford and Tarleton.

During 1932, powers under the Rats and Mice (Destruction) Act, 1919, were delegated to the Council.

The following new legislation became er forcible during 1936 and 1937:—

3/2/36. Order declaring Section 161 (1) Street Lighting, etc., of the Public Health Act, 1875, in Aintree, Altcar, Bispham, Downholland, Ford, Ince Blundell, Melling, Netherton, Sefton, Simonswood and Thornton.

25/1/37. Order declaring all Expenses incurred under Section 45 (provision of receptacles for the deposit of rubbish) of the Public Health Act, 1875, in respect of Removal of House refuse from premises in the Parishes of Aintree, Altcar, Hesketh Bank, Lydiate, Melling, Netherton, Tarleton and Thornton, to be special expenses.

20/11/36. Order declaring the provisions of Section 160 (1) (numbering of houses) of the Public Health Act, 1875, to be in force in the Parish of Maghull and any expenses to be Special Expenses.

23/3/36. Order declaring the provisions of Part IV., Section 51 of the Public Health Acts Amendment Act, 1890, for the regulation of places ordinarily used for public dancing or music or other public entertainment of the like kind to be in force.

14/4/36. Order declaring the provision of Section 66 (provision of fire plugs) Public Health Act, 1875, to be in force in the Parishes of Aintree, Ford, Ince Blundell, Netherton, Sefton and Thornton, also Sections 112, 113 (Offensive Trades) of the Public Health Act, 1875, to be in force in the Parishes of Aintree, Netherton and Thornton.

19/5/36. Order declaring the provisions of Sections 54 and 55 (Watercourses, streams, etc.) of the Public Health Act, 1925, to be in force in the Parishes of Aintree, Aughton, Bickerstaffe, Halsall, Hesketh Bank, Lydiate, Maghull, Melling, Netherton, North Meols, Scarisbrick, Tarleton and Thornton.

20/12/37. West Lancashire Rural (Urban Powers) Order, 1937, declaring provisions of Section 160 (1) (numbering of houses) of the Public Health Act, 1875, to be in force in the Parishes of Aintree, Altcar, Ford, Halsall, Lydiate, Netherton, North Meols, Scarisbrick and Thornton and any expenses to be Special Expenses.

Section B.

GENERAL PROVISION OF HEALTH SERVICES FOR THE AREA.

PATHOLOGICAL REPORTS.

Specimens are sent for examination to the Bacteriological Department of the University of Liverpool, to Messrs. Evans, Lescher and Webb's Biological Institute at Runcorn and to the Pathological Department of the Southport Infirmary.

Four hundred and ninety-nine throat and nose swabs were taken and examined for Bacillus Diphtheriæ, which was found present in one hundred and seven swabs.

Seventy-four swabs were examined for the presence of hæmolytic streptococci, thirty-seven of which were positive. One swab taken from a knee wound also proved positive.

One swab contained organisms of Vincent's Angina.

Seven specimens of blood were examined for organisms of the typhoid group and also thirty-three specimens of urine and thirty-seven specimens of fæces. Of these, three blood specimens and eighteen specimens of fæces were proved positive.

In addition to the above, twelve swabs were taken from Skelmersdale patients in the Hospital. One of these proved positive for Bacillus Diphtheriæ and four negative; hæmolytic streptococci were present in three and absent in four. Ninety-one swabs were taken from Whiston patients in Hospital and examined for Bacillus Diphtheriæ which was found present in nine swabs. Seven swabs were taken from patients from the Fylde area. Four of these were positive for hæmolytic streptococci and three negative.

INFECTIOUS DISEASES HOSPITAL.

COMMITTEE.

Chairman—

COUNCILLOR JOB SUMNER.

Vice-Chairman—

COUNCILLOR C. H. C. SKAFTE.

And Councillors R. A. LEWIS, DR. T. B. CALLAND, REV. J. A. JONES, A. C. ROODHOUSE, JAS. ALCOCK, S. H. HUDSON, P. SEIFFERT, A. BIRCH, F. V. KING, A. DAVENHILL, J. TAYLOR, C. F. KUHL and W. LEDSON.

STAFF.

Medical Superintendent—

HERBERT E. MARSDEN, J.P., M.B., D.P.H., Barrister-at-Law.

Deputy Medical Superintendent—

C. F. H. SERGEANT, M.B., M.R.C.S.

Matron—

MISS A. FAIRHURST, S.R.N.

One Sister, one Staff Nurse, one Assistant Nurse, four Probationers, Cook, Housemaid, Between Maid, Ward Maid, Porter and Gardener.

The Council have owned their own Isolation Hospital since 1897.

The Hospital consists of an administrative block with two small wards for convalescent patients attached and two pavilion blocks. The total number of beds is 43.

A full description of the hospital appeared in the Annual Report for 1936 at pages 30 to 32.

A scheme for the division of the Administrative County of Lancashire into hospital districts was approved by the County Council in May. It provides for a more uniform manner of providing hospital accommodation for patients suffering from infectious disease.

The West Lancashire Hospital's normal function has been to provide for the needs of the West Lancashire Rural District and the Skelmersdale Urban District, but since the inception of the County scheme the Hospital's area of utility has been extended: patients have been admitted from the Boroughs of Crosby and Lytham St. Annes, from the Urban Districts of Formby, Ormskirk and Fleetwood and the Rural Districts of Whiston and Fylde.

The Hospital is adequate for normal times, but definitely too small at epidemic periods.

Admissions from all Districts.

Admissions.	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Scarlet Fever ...	29	58	160	72	36	21	75	81	29	94	46
Diphtheria	10	35	77	44	30	17	29	15	28	4	36
Measles	1	5	2	1	—	—	2	1	1	—	1
Erysipelas	1	2	—	—	1	1	3	3	1	6	1
Enteric Fever Group	—	—	—	—	—	—	1	4	2	—	6
Other admissions ...	8	2	6	11	5	9	3	9	8	4	31
TOTAL ...	49	102	245	128	72	48	113	113	69	108	121

Ambulance.

A new 25 h.p. Morris Ambulance has been purchased to replace the old Vulcan vehicle, which has been taken out of service.

SUMMARY OF ADMISSIONS, DISCHARGES, etc., FROM THE WEST LANCASHIRE RURAL DISTRICT DURING YEAR 1937.

AUGHTON INFECTIOUS HOSPITAL.

Admissions.

Scarlet Fever	39
Diphtheria (including Carriers)	30
Sore Throat, Tonsilitis, etc.	6
Erysipelas	1
Measles	1
Typhoid group	6
Others	7
	90

These admissions were from the following townships:

Aintree.	Three cases of Scarlet Fever, two of Diphtheria and one Diphtheria Carrier, one Tonsilitis. One case admitted for observation was found not to be suffering from Scarlet Fever and discharged.
Aughton.	Six cases of Scarlet Fever.
Bickerstaffe.	Two Scarlet Fever cases and one Diphtheria.
Halsall.	One case of Paratyphoid Fever and one for observation.

Hesketh Bank.	One case of Diphtheria and four carriers. Two cases of Tonsilitis.
Lydiate.	Eleven cases of Scarlet Fever, one of Diphtheria, two of Paratyphoid Fever and one of Tonsilitis.
Maghull.	Five cases of Scarlet Fever and one of Enteric Fever.
Melling.	Three cases of Scarlet Fever, one of Diphtheria and one of Measles, and one of Tonsilitis.
Netherton.	Four cases of Scarlet Fever, two Diphtheria carriers and one Tonsilitis.
North Meols.	Two cases of Scarlet Fever, four of Diphtheria with three carriers, one of Tonsilitis and one of Erysipelas. One case admitted as Scarlet Fever was found not to be so suffering and discharged.
Scarisbrick.	Two cases of Scarlet Fever, five of Diphtheria and one carrier, one case of Abortus Fever, and one of Paratyphoid Fever.
Tarleton.	Six cases of Diphtheria and three carriers.
Thornton.	One case of Scarlet Fever.

Discharges.

Scarlet Fever...	40
Diphtheria	32
Erysipelas	1
Typhoid Group	6
Measles	1
Others	10
	90

One case of Diphtheria died after having been in hospital 59 hours.

ADMISSIONS, etc., FROM OTHER DISTRICTS.

Admissions.

Skelmersdale Urban District	Four cases of Scarlet Fever and two of Diphtheria.
Lytham St. Annes Borough	Three cases of Scarlet Fever.
Whiston Rural District	One case of Diphtheria and six carriers from Knowsley.
Huyton-with-Roby Urban District ...	One case of Diphtheria from Roby; one case of Diphtheria and two Diphtheria carriers from Huyton

The outside work done in connection with the hospital was as follows:—

For West Lancashire Rural District.

Journeys with ambulance for patient	97
Journeys with ambulance for bedding	125
Houses attended for disinfection	112
Number of times disinfector used	149
Rooms sprayed	239
Schools sprayed	6
Articles stoved	2467

For Skelmersdale Urban District.

Journeys with ambulance for patient	7
Journeys with ambulance for bedding	8
Houses attended for disinfection	9
Number of times disinfector was used	5
Rooms sprayed	13
Articles stoved	78

For Ormskirk Urban District.

Journeys for patient and bedding	47
Journeys for the return of bedding	47

Forty-six journeys were made with the ambulance for the Ormskirk Urban District Council, in accordance with the Council's agreement.

NURSING.

Of recent years the provision of district nursing throughout the West Lancashire Rural District has been augmented and now almost every township in the Rural District has a nurse available.

In Halsall, a district nurse is provided by Lady Lethbridge, and Scarisbrick also has its own nursing association. The remainder are affiliated associations under the County administration or under the control of the County Superintendent, Miss E. H. Furminger, 12, Ribblesdale Place, Preston.

Altcar is included in the Formby Association; Ince Blundell in that of Great Crosby; Bispham with Parbold and Appley Bridge; Bickerstaffe with Rainford. The new Sefton Affiliated Association is situated wholly in the Rural District and provides for Thornton, Netherton, Sefton, Aintree and part of Ford. Tarleton and Rufford are combined with Bretherton (the latter in the Chorley Rural District).

At the end of 1936 a new Association for Kirkby (in the Whiston Rural District), Lydiate and Melling was formed, and it is anticipated that this association's activities may later be increased to include Maghull.

The Skelmersdale and District Association provides for the adjacent rural area in Bickerstaffe.

With one exception all the nurses are certified midwives.

The Midwives Acts are administered by the County Council. Subjoined is a list of the midwives resident in the District at the end of 1937.

Child Welfare Centres are provided by the County Council in Ormskirk, Skelmersdale and Maghull.

Four Health Visitors work in the District.

The Public Assistance Institution in Ormskirk accommodates unmarried mothers, illegitimate infants and homeless children. Apart from this there is no provision in the District for these cases.

PARTICULARS OF WORK DONE BY THE VARIOUS NURSING ASSOCIATIONS OPERATING IN THE WEST LANCASHIRE RURAL DISTRICT—APRIL 1st, 1937, to MARCH 31st, 1938.

ASSOCIATION	CASES NURSED								TOTAL	
	Midwifery	Maternity	Medical	Surgical	T. B.	Nursing	Ante-Natal	T. B.	Cases	Visits
Sefton and District (including Aintree, Netherton, Sefton. Lunt, Thornton and part of Ford)	8	13	59	40	2	2960	103	76	122	3139
Kirkby, Lydiate and Melling District.	14	10	76	56	2	3457	150	73	158	3680
Scarisbrick District	18	4	60	36	—	1641	258	—	118	1899
Great Crosby and District	6	21	359	76	4	7919	130	62	466	8111
Formby District	43	24	194	112	5	3452	206	20	378	3658
Tarleton and District (including Tarleton, Rufford, Bretherton and Hesketh Bank)	22	22	186	108	1	4939	138	34	339	5111
Rainford District	26	32	122	82	—	8376	188	—	262	8564
TOTAL	137	126	1056	510	14	32774	1173	265	1843	34162

MIDWIVES RESIDENT IN THE DISTRICT AT 31st DECEMBER, 1937.

Mrs. E. Harding, "Glendene," Scarisbrick	C.M.B.
Miss M. A. Bond, New Street, Halsall	C.M.B.
Mrs. J. E. MacKellar, Finger Post Cottage, Liverpool Road, Aughton	C.M.B.
Mrs. A. London, "Cauldon," The Crescent, Liverpool Road, Maghull	C.M.B.
Miss W. Irons, District Nurse, "Burnside," Gorse Lane, Tarleton	C.M.B.
Mrs. M. A. Pugh, 22, Marina Crescent, Netherton, Nr. Liverpool	C.M.B.
Mrs. E. Spencer, 17, Marina Crescent, Netherton, Nr. Liverpool	C.M.B.
Miss R. Shaw, 94, Park Lane, Netherton	C.M.B.
Miss E. I. Grunes, 17, Marina Crescent, Netherton, Nr. Liverpool	C.M.B.
Miss A. M. Irwin, "Annesley," Liverpool Road, Maghull ...	C.M.B.
Miss G. Johnson, District Nurse, Burnside, Gorse Lane, Tarleton	C.M.B.
Miss E. Morris, 17, Stanley Road, Alt Park Estate, Maghull	C.M.B.
Mrs. Mary Elizabeth Gartside, Oakhill House, Liverpool Road, Lydiate	C.M.B.

PUBLIC HEALTH ACT, 1936—Nursing Homes.

Mrs. A. London, "Cauldon," " The Crescent, Maghull.	One Maternity case.
Mrs. Jane Pope, "Rose Dene," ... Liverpool Road, Maghull.	One Maternity case.
The Misses Mary A. Wharton and ... E. B. Jones, 32, Gainsborough Avenue, Maghull.	Two Maternity or medical cases.
Mesdames Spencer and Grunes, ... 17, Marina Crescent, Netherton.	One Maternity case.
Mrs. M. E. Gartside, ... Oak Hill House, Liverpool Rd., Lydiate.	Six Maternity cases and one medical or surgical case.

PUBLIC VACCINATORS.

Name.	District.
W. P. O'Regan, Mansion House, Ormskirk.	Aughton, Bickerstaffe, Halsall, Scarisbrick.
C. V. H. Nesbitt, "Sefton View," Maghull.	Downholland, Lydiate, Maghull, Melling, Simonswood.
H. B. Wickham, "Lynton," Maghull.	Bispham, Hesketh Bank, Rufford, Tarleton, North Meols.
A. B. Sykes, "Ashurst," Formby.	Altcar.
W. F. Jones, 2, Bedford Road, Walton, Liverpool.	Aintree.
J. F. Webb, "Newlyn," Crosby Rd. N., Waterloo.	Ince Blundell, Lunt portion of Sefton, Thornton.
J. C. Mann, "Riverslie," Crosby Rd., Seaforth.	Netherton, Ford, Sefton.

VACCINATION OFFICERS.

Name.	District.
N. Bottomley, 5, Liverpool Road, Skelmersdale.	Bickerstaffe, Bispham, Scarisbrick, Simonswood, Aughton (part).
N. C. Lyon, 74, Wigan Road, Ormskirk.	Altcar, Aughton (part), Downholland, Halsall, Lydiate, Maghull, Melling.
Mrs. L. Dandy, Blackgate Lane, Tarleton	Hesketh Bank, North Meols. Rufford, and Tarleton.
H. D. Plevin, 9, Cambridge Road, Waterloo.	Ince Blundell, Thornton, Sefton, including Lunt, Ford, Netherton, Aintree.

Section C.

SANITARY CIRCUMSTANCES OF THE AREA.

WATER SUPPLY.

The table on Page 42 shows the total number of supplies from public services for each township, with increases or decreases during 1937, the source of such supplies, the percentage of supplies to inhabited houses, and also the total number of supplies from wells, rain water tanks, etc., and their increase or decrease during the year.

In Altcar, Downholland, Halsall, Bickerstaffe, Lydiate, Scarisbrick, North Meols and Aughton, and also in Maghull, the Southport and District Water Board supply the water, own the mains, and levy the water rate.

The water comes from deep wells and is hard, but is otherwise satisfactory for general use.

Rufford is supplied with water pumped from deep wells by the Ormskirk Urban District, who deliver the water through a meter to the West Lancashire Rural District Council. The latter Council own the mains and levy the water rate.

Negotiations were completed with the Ormskirk Urban District Council, who laid a new main from their pumping station at Greetby Hill to Burscough Bridge. Since this work was completed the supply to Rufford has been satisfactory, and there has been no further evidence of any shortage in any part of the parish. The temporary supply from the Tarleton main at the Holmeswood village has been discontinued.

Melling obtains its water supply from the St. Helens Corporation, through mains owned by the West Lancashire Rural District Council, who levy the water rate.

Hesketh and Tarleton receive their water from the Preston Corporation through meter from Penwortham. The West Lancashire Rural District Council laid a trunk main from the latter point to the water tower at Tarleton. The West Lancashire Rural District Council own the mains in the two parishes and levy the water rate.

In 1922, to augment the supply, a concrete water tower was constructed on high land in Hesketh Lane, Tarleton. The tower is 34 feet high to the base of the tank, which has a capacity of 60,000 gallons—about half a day's supply. The tank is filled direct from the trunk main. In the event of a breakdown on the mains, the service can be maintained for a short time from the tower.

During the past few years the quantity of water consumed has shown a steady increase owing to the building developments and to the development of the horticultural industry of this area.

In the portion of the district formerly administered by the Sefton Rural District Council the Liverpool Corporation provide the supply and are responsible for the distribution of water.

In 1935 a scheme of public water supply was provided in the Parish of Bispham. Formerly the inhabitants drew their water supply from two wells. The public supply is obtained from the Wigan Rural District Council's mains through meter on the boundary.

The total lengths of mains laid in the parish are as follows.—4 inch CI. mains, 2.026 miles. 3 inch C.I. mains, 0.887 miles.

It may be generally stated that all houses in the Rural District are supplied by public service, except in cases where the cost of carrying the mains to the house would be prohibitive.

Wells throughout the Rural District are usually in proximity to cultivated land or other sources of sewage pollution, and frequent inspection is necessary.

The Martin Mere area in Scarisbrick is probably worse off for water than any other portion of the Rural District. It is a tract of land over 3,000 acres reclaimed from the sea, all below sea level, and intersected with dykes. The few wells that have been sunk have all fallen into disuse, owing to the water being impure and brackish is taste.

There are only sixteen houses scattered over this large area, five of them being cottages and eleven farm houses.

Tanks are provided at each house, with downspouts from the roofs leading into them.

In most cases the drinking water tank is underground.

The quantity of water available appears to be adequate, except for a few days in particularly dry weather.

Most of the farms are owned by a large estate, which has the necessary transport facilities for conveying water to the farms when the rain water supply fails.

Adequate covering of all tanks containing drinking water should be insisted upon, and drinking water should occasionally be chlorinated.

The West Lancashire Rural District is particularly well supplied with wholesome water. It is interesting to note that even though the area includes the 3,000 acres mentioned above where a piped supply is out of the question, 97.4 per cent. of the houses in the whole District are supplied from public mains.

Eight samples of water from wells were taken during the year. Four of these were found to be suitable for human consumption and four were unsuitable.

There have been no important extensions of mains during the year under review.

SUMMARY OF WATER SUPPLIES FOR THE YEAR ENDED DECEMBER, 31st, 1937.

1937	Supplied from Public Main									Other Supplies		Total Number of Houses and Percentages	
	Upholland Urban District Council,	Wigan Rural District Council	Liverpool Corporation	Ormskirk Urban DistrictCouncil	St. Helens Corporation	Preston Rural District Council	Southport and District Water Board	TOTALS	Increase or Decrease	Wells, etc.	Increase or Decrease	Total Number of Houses	Percentage of Houses Supplied by Public Main
Aintree	—	—	339	—	—	—	—	339	109	—	—	339	100·0
Altcar ...	—	—	—	—	—	—	159	159	27	25	—	184	86·4
Aughton ...	—	—	—	—	2	—	911	913	22	6	—	919	99·1
Bickerstaffe ...	6	—	—	—	—	—	342	348	2	10	—	358	97·2
Bispham ...	—	55	—	—	—	—	—	55	6	11	—6	66	83·3
Downholland ...	—	—	—	—	—	—	160	160	3	13	—3	173	92·4
Ford	—	—	72	—	—	—	—	72	40	—	—	72	100·0
Halsall	—	—	—	—	—	—	572	572	10	22	—3	594	96·2
Hesketh Bank...	—	—	—	—	—	512	—	512	12	4	—	516	99·2
Ince Blundell ...	—	—	119	—	—	—	—	119	1	4	—	123	96·7
Lydiate	—	—	—	—	—	—	394	394	1	28	—	422	93·3
Maghull	—	—	—	—	4	—	1706	1710	319	14	—	1724	98·9
Melling	—	—	1	—	340	—	—	341	1	6	—	347	98·2
Netherton ...	—	—	819	—	—	—	—	819	82	—	—	819	100·0
North Meols ...	—	—	—	—	—	5	690	695	—2	22	+1	717	96·7
Rufford	—	—	—	274	—	—	—	274	9	6	—	280	97·8
Scarisbrick ...	—	—	—	6	—	—	734	740	8	30	—1	770	96·1
Sefton	—	—	117	—	—	—	—	117	—	7	—	124	94·3
Simonswood ...	—	—	—	—	70	—	—	70	1	8	—	78	89·6
Tarleton ...	—	—	—	2	—	755	—	757	20	3	—1	760	99·6
Thornton ...	—	—	278	—	—	—	—	278	41	—	—	278	100·0
TOTALS	6	55	1745	282	416	1272	5668	9444	712	219	—13	9663	97·7

SEWERAGE AND SEWAGE DISPOSAL.

In the following parishes main sewerage systems are available:—Aughton, Maghull, Lydiate, Rufford, Tarleton, Aintree, Netherton, Sefton and Thornton.

The construction of the sewerage scheme for the townships of Aintree, Sefton, Netherton and Thornton has now been completed and the disposal works were opened by Sir George Etherton, Clerk of the Lancashire County Council, in March, 1937.

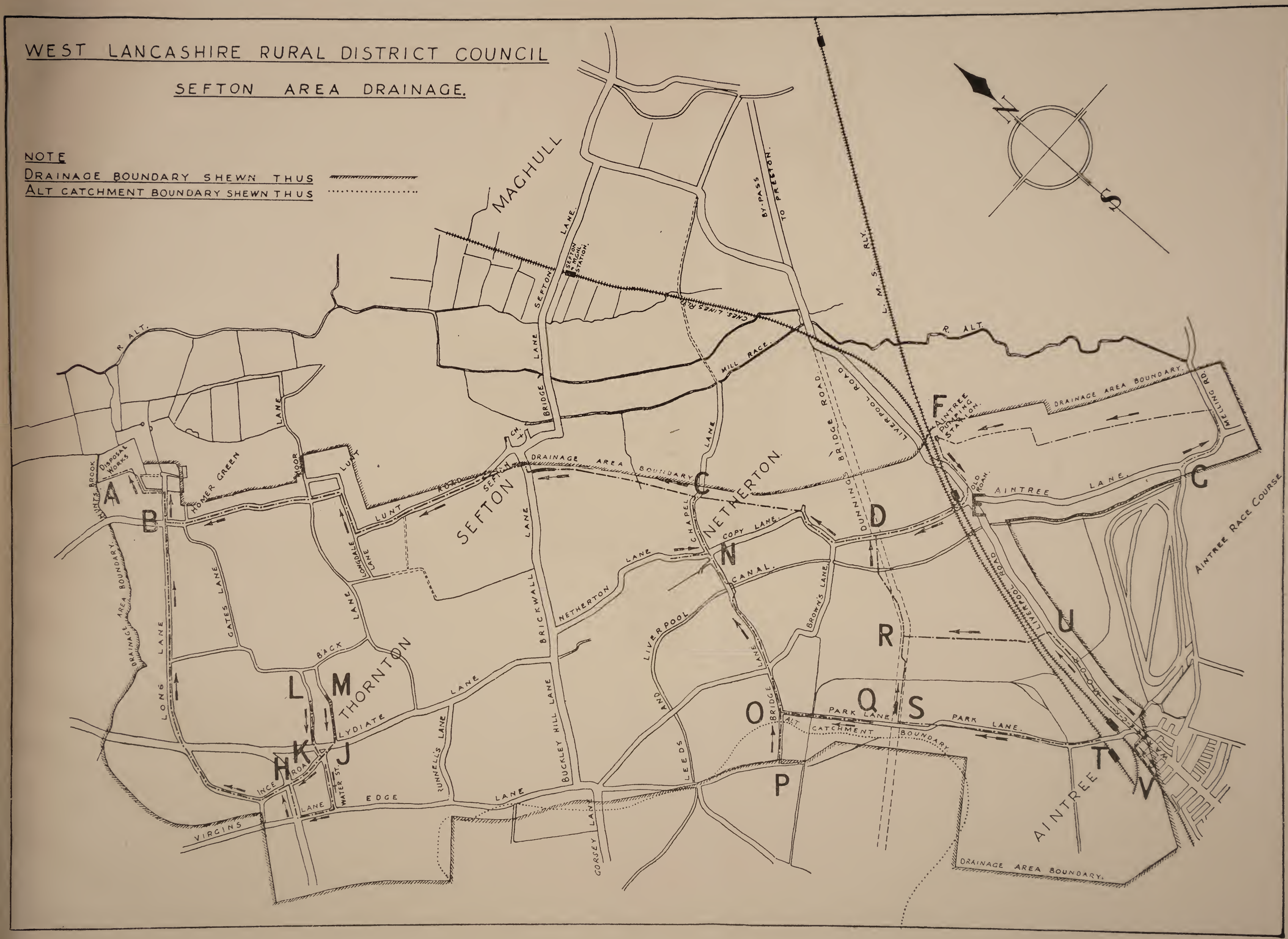


Fig 1. Map of the Sefton Area Drainage.

The following is a description of the scheme by the late Mr. J. S. Rosbotham, A.M.Inst. C.E., and is reprinted by permission of " Civil Engineering ":—

The Sefton area of the West Lancashire Rural District Council is the southern portion of the Council's district, and was formerly part of the old Sefton Rural District. The area served by this drainage scheme comprises the parishes of Aintree, Netherton, Sefton and Thornton, covering an area of approximately 2,700 acres. It is bounded on the south by the City of Liverpool, the Urban Districts of Litherland and Crosby, an dto the north by the River Alt.

The Sefton area of the West Lancashire Rural District Council is the southern portion of the Council's district, and was formerly part of the old Sefton Rural District. The area served by this drainage scheme comprises the parishes of Aintree, Netherton, Sefton and Thornton,, covering an area of approximately 2,700 acres. It is bounded on the south by the City of Liverpool, the Urban Districts of Litherland and Crosby, and to the north by the River Alt.

Under the Council's Town Planning Scheme the area is zoned as shown below:—

Industrial	760 acres.
Intermediate	980 acres.
Residential	424 acres.
Not definitely zoned, and awaiting general development order ...	392 acres.
Restricted area	40 acres.
Open Spaces	113 acres.
With further open spaces to follow.	

The industrial area comprises 760 acres, and is situated immediately adjacent to the L.M.S. and Cheshire Lines Railway and the Leeds and Liverpool Canal, and is approximately five and a half miles from the Liverpool Town Hall. From a transport point of view the area is exceptionally well catered for by rail, trams and buses, and also by barge on the canal. The new road now being constructed known as the Dunnings Bridge Road will provide a direct means of communication to Liverpool and Bootle, and to the North Docks in particular, and in the other direction it will be the direct outlet for traffic to the north and the industrial towns of North-East Lancashire and the West Riding of Yorkshire.

ONLY SEWERAGE LACKING.

From this route, commencing almost in the centre of this industrial area, a direct link is to be constructed by the County Council to the East Lancashire Road, providing quick and easy access to Manchester and other districts. This link Road is to be continued in a westerly direction from the Dunnings Bridge Road to join the new Southport-Liverpool Road at Thornton.

The Liverpool Corporation Electricity Committee have, during the past few years, extended their cables in almost every direction. The water supply is provided by the Liverpool Corporation Waterworks Committee, who have recently carried out extensive works on the laying of new mains, as also have the Liverpool Gas Company.

Just as the City of Liverpool has made provision at Speke for industrial expansion on the south side of the City, the only public service lacking to make this portion of the Sefton area of the West Lancashire Rural District suitable for industrial development to the adjacent to Ince Woods, one of the beauty spots of the district.

About 1930 extensive factory and housing developments commenced in the Aintree and Netherton areas, together with better-class housing development in Thornton. This parish is situated to the west, and is one of the better residential districts, being near Liverpool and adjacent to Ince Woods, one of the beauty yspots of the district.

To cope with this development and to accelerate it the Council decided to embark upon a sewerage scheme, and in 1933 the Council's consulting engineer, Mr. H. B. Ward, M.Inst.C.E. F.S.I. etc., of Liverpool and Manchester, was asked to report upon the sewerage of the district.

SEPTIC TANKS.

Upon examination of the existing drainage arrangements it was found that sewage from property was being passed through septic tanks and the effluent discharged into land drains or the nearest water courses, causing in some cases a certain amount of pollution.

Upon receipt of a report, together with a preliminary estimate, the Council gave the matter their serious consideration, and instructed Mr. Ward to proceed with detailed designs of the scheme.

Owing to the flat gradients throughout the district, especially from east to west, it became apparent that a pumping scheme was essential, and, because of this, a completely separate system of drainage was decided upon. Prior to deciding on what peak flow to design the capacity of the sewers records were taken in the parish of Maghull, where a separate system was in operation. After consideration of these records it was decided to design the foul sewers on a maximum flow of 4 D.W.F., which was considered a safe figure to adopt.

To prevent the sudden inflow of trade waste from certain factories in Netherton, which would have meant an increase in the capacity of the sewers with a consequent increase of cost and possibly some difficulties in treatment at the disposal works, negotiations were entered into with the various owners, and agreements were reached whereby they discharge their trade waste at a constant rate over a period of 24 hours.

RESULTS OF TRIAL HOLES.

Prior to the commencement of designs trial holes were taken out along the various lines of proposed sewers, and also on the disposal works site. These showed that from approximately 9ft. to 12ft. below ground level the subsoil consisted of water-logged sand lying on a bed of clay, while on the higher levels, i.e., to the south near the limits of the drainage area boundary, the strata consisted of approximately 2ft. of sand on clay, and in Thornton the substrata was found to be soft sandstone rock.

Owing to the large amounts of subsoil water which were found, especially along the line of the low level trunk sewer, the invert of which varies from 7 O.D. to 35 O.D., it was decided that special precautions should be taken to ensure that all pipe joints would be watertight. After considering the matter, Stanton Cornelus composite cement grouted joints were adopted.

For the basis of calculations for the sewers it was assumed that the total population for the four parishes concerned within the next 30 years would be 30,000 persons, which were allocated as follows:—

Parish of Aintree	7,000
Parish of Netherton	12,000
Parish of Sefton	3,000
Parish of Thornton	8,000

An amount of 250,000 gallons per day was allowed for possible trade waste flow from the parishes of Aintree and Netherton.

Developments are taking place at very low levels in Aintree, and a draft lay-out has been submitted for 1,300 houses on the land bounded by Liverpool Road, Aintree Lane, Melling Lane, and the drainage area boundary on the north, which is the limit of development to the south of the River Alt. Of these houses 250 have already been built immediately adjacent to the Liverpool Road, and are now occupied. It was decided to build a pumping station to deal with this area.

SCREENING CHAMBERS.

The sewage enters this pumping station down a 12-in. pipe at a gradient of 1 in 350, the invert of the pipe being approximately 15ft. below ground level. Before entering the pump storage well the sewage passes through a screening chamber 5ft. wide, in which is fitted an automatic screen. The screen is set at an angle of 60 degs. with the horizontal, the spacing between the bars being 1½in. It is controlled by means of a time switch, which permits operation of the raking gear for five minutes in each half-hour. The screenings are carried to the outside of the building by means of a belt conveyor. All bearings are suitable for forced grease lubrication, and the under-water bearings of the screen sprockets have extended tubes to enable lubrication to be carried out from floor level..

After passing the screen the sewage enters the pump storage well and is raised from this by means of three vertical spindle "Amphistoma" fullway type pumps. These pumps are designed to deal with

sewage from a population of 6,300 persons, and each has a capacity equal to 2 D.W.F.

As the maximum assumed flow will only be 4 D.W.F., it is expected that only two of the pumps will run simultaneously, leaving the third as a standby in case of emergency. Provision has been made for a fourth pump, should this ever be required, and the lay-out of the delivedy piping is arranged for connecting up an additional unit.

The pumps are automatically operated by float switch gear, the floats being set at different levels in the pump storage well. A float selevtor panel has been arranged so that the sequence of operation can be varied from time to time to ensure that each unit does an equal amount of work. The units are driven by slip-ring induction motors, and lift the sewage through a 9in. rising main against a static head of 29ft. to the head of the trunk sewer at the Pt. E (Fig. 1).

From the Pt. E the sewage flows down a 15in. pipe at 1 in 600 to the Pt. C, where the size is increased to 18in. dia. It continues in a westerly direction at the same gradient until the Pt. B is reached at Home Green, where the pipe changes to 24in. at 1 in 1,00c. The sewer then runs in a northerly direction for a short distance down Broad Lane, and then turns at right angles, running parallel to the access road until it reaches the disposal works, where it discharges into the main pumping station at Pt. A.

Various tributary sewers are connected en route. One at Homer Green, which is a 12in. pipe, carries all the sewage from Thornton, where residential property is springing up. The sewer at the junction of Edge Lane and Water Street is capable of extension along Edge Lane to Buckley Hill Lane, where a few council houses are situated.

All the other branches are also capable of extension to tap new developments as they occur.. A surface water sewer has also been laid to drain development, and commences near to the junction of Edge Lane and Water Street as a 9in. pipe following the line of the foul sewer, and discharges as an 18in. pipe into Hunts Brook at the point nearest the Long Lane opposite the junction of Long Lane and Gates Lane.

Another tributary sewer connects with the main pipe at the Pt. C on Chapel Lane, Netherton, this branch being a 9in. pipe at 1 in 150. It rises in a southerly direction to the Pt. N at the junction of Chapel Lane and Copy Lane, where another 9in. branch connects to it. The pipe continues up Bridge Lane beneath the Leeds and Liverpool Canal up to the Pt. O, where it bifurcates, one branch going along Park Lane to the Pt. Q and the other to the Pt. P. These two branches take sewage from new property on the area enclosed by Bridge Lane, Park Lane, Dunnings Bridge Road and the drainage boundary.

The third tributary leaves the trunk sewer at the Pt. D at the junction of Copy Lane and the Dunnings Bridge Road. It runs in a southerly direction beneath the Leeds and Liverpool Canal along the Dunnings Bridge Road to the Pt. C as a 12in. pipe at 1 in 150. From the Pt. S it continues along Park Lane as a 9in. pipe to the Pt. T at

the boundary of the Cheshire Lines Railway. From the Pt. R to Pt. T the sewer is a stoneware pipe, jointed with acid-resisting cement, the manhole chambers and inverts also being rendered with the same material. This was adopted because the bulk of the sewage above this point is trade waste, and consists largely of flow from a galvanising works which, on analysis, proved to have a deleterious effect on cement.

A subsidiary branch leaves the Dunnings Bridge Road sewer at the Pt. R, running in an easterly direction beneath the Cheshire Lines and L.M.S. railways to Liverpool Road at the Pt. U. It continues in a southerly direction up Liverpool Road, tapping existing properties on the way, and terminates on the L.M.S. railway embankment at the Pt. V, where about 50 old houses are to be connected.. The section of sewer between the Pts. R and U cuts existing septic tank effluent drains which drain sewage from new property and factory developments covering the site bounded by the Dunnings Bridge Road, Park Lane, the Cheshire Lines Railway, and the fence line running from east to west midway between Park Lane and the sewer R-U.

As there are no watercourses in this particular area a surface drain was laid. It is designed to drain the area bounded by the railway to the east, the Leeds and Liverpool Canal to the north, Brown's Lane and Bridge Lane to the west, and the Drainage area boundary to the south. It commences as an 18in. pipe near the Pt. T in Park Lane and passes through the Pts. S, R. and D, increasing in size to 45in. in diameter. From Pt. D it runs 150 feet north, and then turns in an easterly direction, discharging into a watercourse at the Cheshire Lines Railway.

Before deciding on what population to base the design of the disposal works statistics were obtained of the population for the past few years, and these were as shown in the table hereunder:—

Netherton Parish of	1932	1933	1934	1935	1936
Aintree	376	375	433	426	887
Netherton	543	677	652	2,269	2,894
Sefton	501	496	480	439	485
Thornton	312	329	395	580	1,044
Total	1,732	1,877	1,960	3,714	5,310

After consideration of these figures it was decided to design the disposal works so that they would be capable of treating sewage from 10,500 persons, plus a trade waste flow of 25,000 gallons per day. The population was apportioned as follows:—

Parish of Aintree	1,000
Parish of Netherton	5,000
Parish of Sefton	500
Parish of Thornton	4,000

Owing to the high flood levels which obtain in Hunts Brook into which the effluent discharges it was found that certain of the units of the disposal works would have to be built above ground level in order to obtain a free discharge.

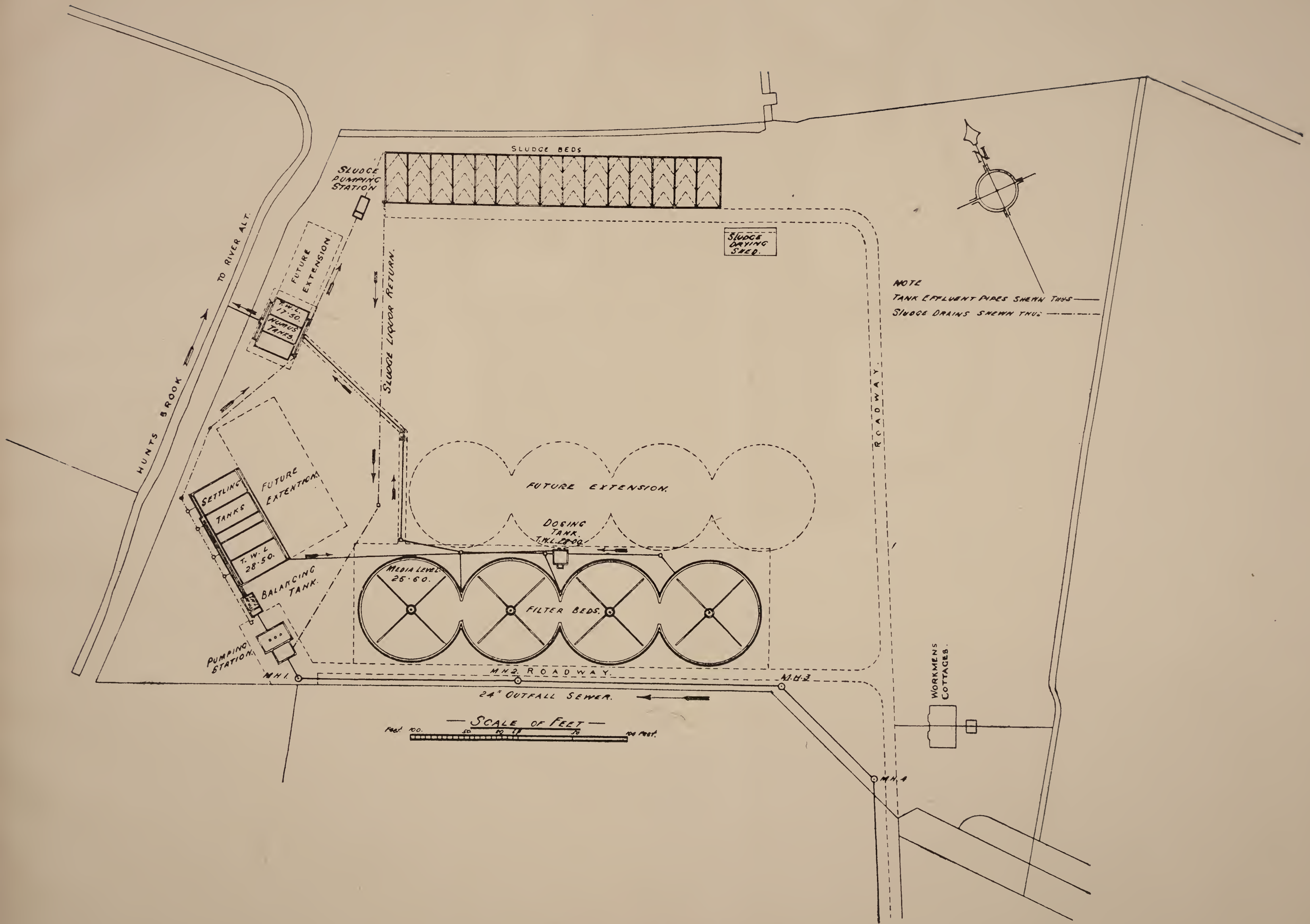


Fig. 2. Lay-out of the Disposal Works.

DUPLICATE SCREENING GEAR.

As in the case at the Aintree pumping station, the sewage, on discharging at the disposal works, passes through duplicate screening chambers prior to being pumped. The screening plant is similar to that installed at Aintree, but is in duplicate, clutch gearing being provided so that the screens can be worked singly or together.

The raking gear is operated by a 5 b.h.p. slip ring induction motor direct-coupled to a totally enclosed oil-immersed worm reduction gear; shear pin devices are incorporated to prevent damage in the event of the rake prongs becoming jammed on timber or similar matter which may come down the sewer. Screenings are delivered outside the building by means of a belt conveyor. The plant is controlled by a time switch with alternative hand control.

After passing the screens the sewage enters the pump storage well, from which it is raised by three vertical spindle fullway type pumps, which deliver the sewage to an overhead tank adjoining the pumping station. Each pump is capable of dealing with sewage at the rate of 2 D.W.F. against a head of 30ft., so that only two pumps will work together, leaving the third as a stand-by. Provision has been made for the installation of a further pump at a future date. The control and switch gear is exactly similar to that installed in the Aintree pumping station. An overhead travelling crane capable of lifting 1 ton has been installed to facilitate erection and dismantling of plant.

The balancing tank stands approximately 16ft. above ground level, and is built of reinforced concrete, the columns being carried 11ft. below ground, so that the foundations rest in solid clay. In this tank is fitted a specially-designed 12-in. dia. constant volume draw-off arm, arranged in such a way that, irrespective of the water level in the tank, the discharge remains constant at 1 D.W.F.

In the event of the flow exceeding this amount for any considerable time the surplus over 1 D.W.F. on reaching a pre-determined level passes over a cill cut in the wall of the tank and discharges down the inlet channel to the settlement tanks. This tank was incorporated in order to make the flow through the tanks synchronise as much as possible with the flow down the sewer.

The inlet channel is constructed as a cantilever from the outer walls of the settlement tanks, and in it is built a standing wave flume recorder. Mounted alongside the flume is an electrically-operated transmitter, which is connected to the main recording panel in the motor room of the pumping station. The transmitter and the recording panel both give the instantaneous rate of flow on a dial, while the panel also records the flow on a seven-day chart.

The settlement tanks, which are 12 hours D.W.F. capacity, are built of reinforced concrete. There are four tanks of the continuous flow type built in pairs and standing 12ft. above ground level. They are built on piers carried 10ft. into the ground, and the foundations are designed for a safe load of 2 tons per square foot.

From the settlement tanks the sewage flows down a 15in. dia. inverted siphon feed pipe to the dosing tank, a washout pipe being provided for flushing the pipe connecting to the sludge liquor drain. The dosing tank is built of reinforced concrete, and stands on columns above ground level. A washout valve is provided for periodic cleansing and flushing out of any sediment. The flow to the filters is controlled by means of an air lock siphon.

The four filters are 91ft. in diameter, and the floors fall from the centre to effluent channels around the circumference. On the floors and beneath the walls are laid slotted floor tiles, and on these rests the blast furnace coke media to an average depth of 6ft. The media is dosed at the rate of 50 gallons per cubic yard per day. The central wells are 6ft. dia., built of honey-combed engineering brick 9in. thick, while the outer walls are built of rubble masonry from 18in. to 12in. thick, set in cement mortar and reinforced with fabric. The tops of the walls are finished with an artificial stone coping coloured to match the masonry.

The distributors are designed to deliver up to 4 D.W.F. In order to ensure satisfactory rotation on 1 D.W.F., and also to be capable of passing the maximum flow within the limits of head available, they are arranged so that two arms on each machine deal with 1 D.W.F., the entrance to the other two arms being controlled by overflow weir boxes, all four arms being brought into operation when dealing with the maximum flow.

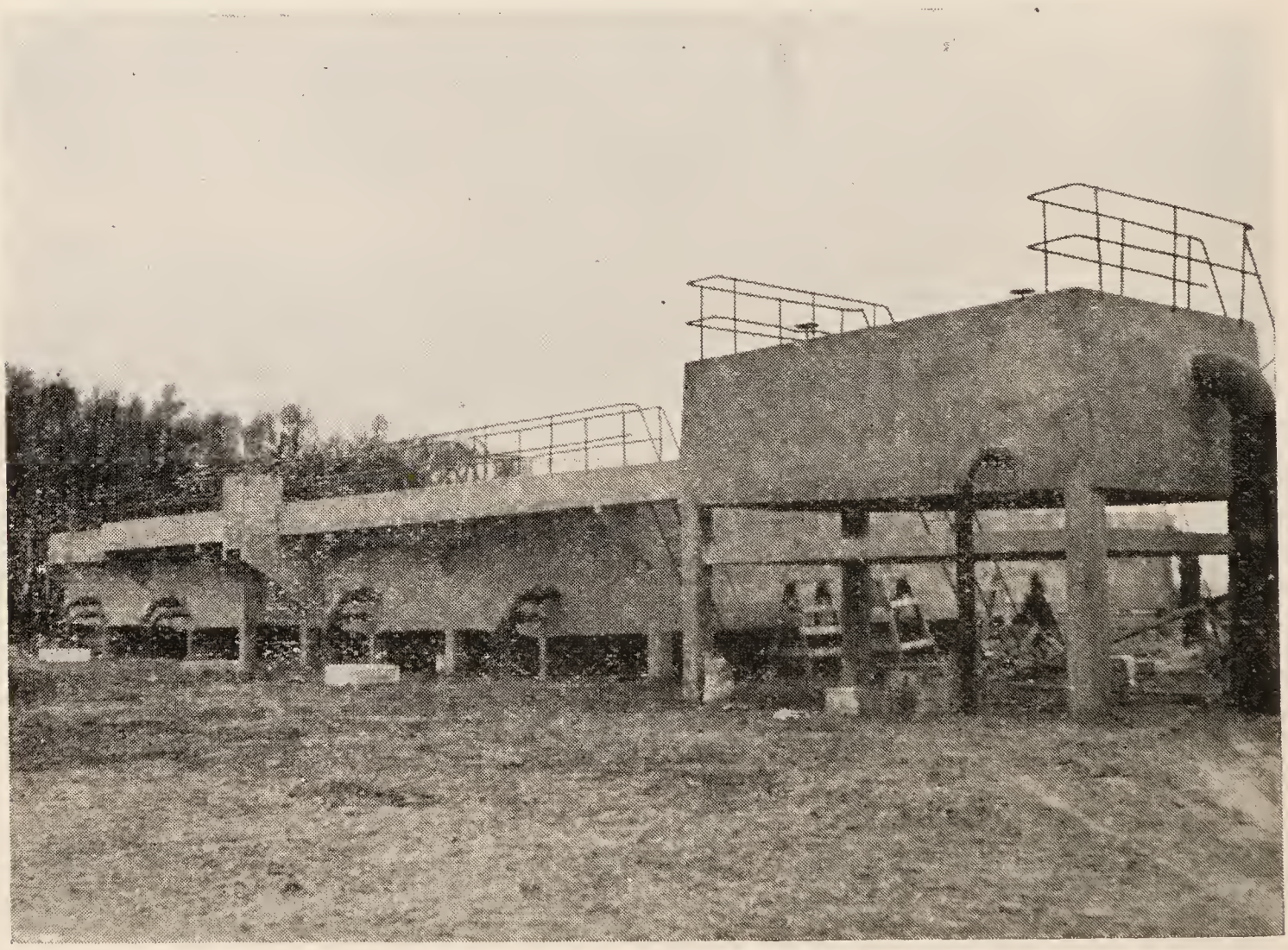


Fig. 4. View of Filters and Dosing Tank.

HUMUS TANKS.

The filter effluent then flows to the three humus tanks. These are the continuous flow type, and have a total capacity of 4 hours D.W.F. The effluent from these tanks discharges into Hunts Brook, a tributary of the River Alt.

The supernatant water draw-pipes from the settlement tanks drain to the main pumping station, and the liquid is pumped back for re-treatment. The sludge is drained to the sludge pumping station, the draw-off pipes from the humus tanks being picked up en route.

The sludge pumping station is situated near the sludge beds. It contains a fullway type pump, automatically controlled by a float switch. The pump has a three-way delivery, one delivering settlement tank sludge to the sludge beds, one pumping humus tank sludge to the sludge liquor return drain, and the third delivering supernatant water from the humus tanks direct to Hunts Brook.

It was decided to pump humus tank sludge to the liquor return drain which flows to the inlet of the main pumping station, so that ripe sludge might mix with the raw incoming sewage and so assist settlement of solids in the settlement tanks in order to obtain a better effluent flowing to the filters.

The sludge beds, 15 in number, are built of reinforced concrete, their area being 1 square yard to seven persons. They are drained by porous concrete pipes laid on the floor ranging in size from 2in. to 4in. in diameter. The sludge liquor is collected in a common drain and returned to the inlet of the works for re-treatment. The beds are filled to an average depth of 18in. with graded clinker topped with fine ashes. The de-watered sludge is excavated by hand and transported by jubilee wagons on a narrow gauge track to a sludge drying shed.

The sludge drying shed is built of steel, with the sides and roof built of corrugated asbestos coloured green. The walls and floor are built of reinforced concrete. The sludge is stored here when dry, ready for carting away by farmers for use on the land.

The site is laid out with roads and footpaths. These are topped with red shale and lined with precast concrete kerbs. Along the southern boundary of the site the strip of land between the road and the fence has been laid out with shrubs and trees have been planted.

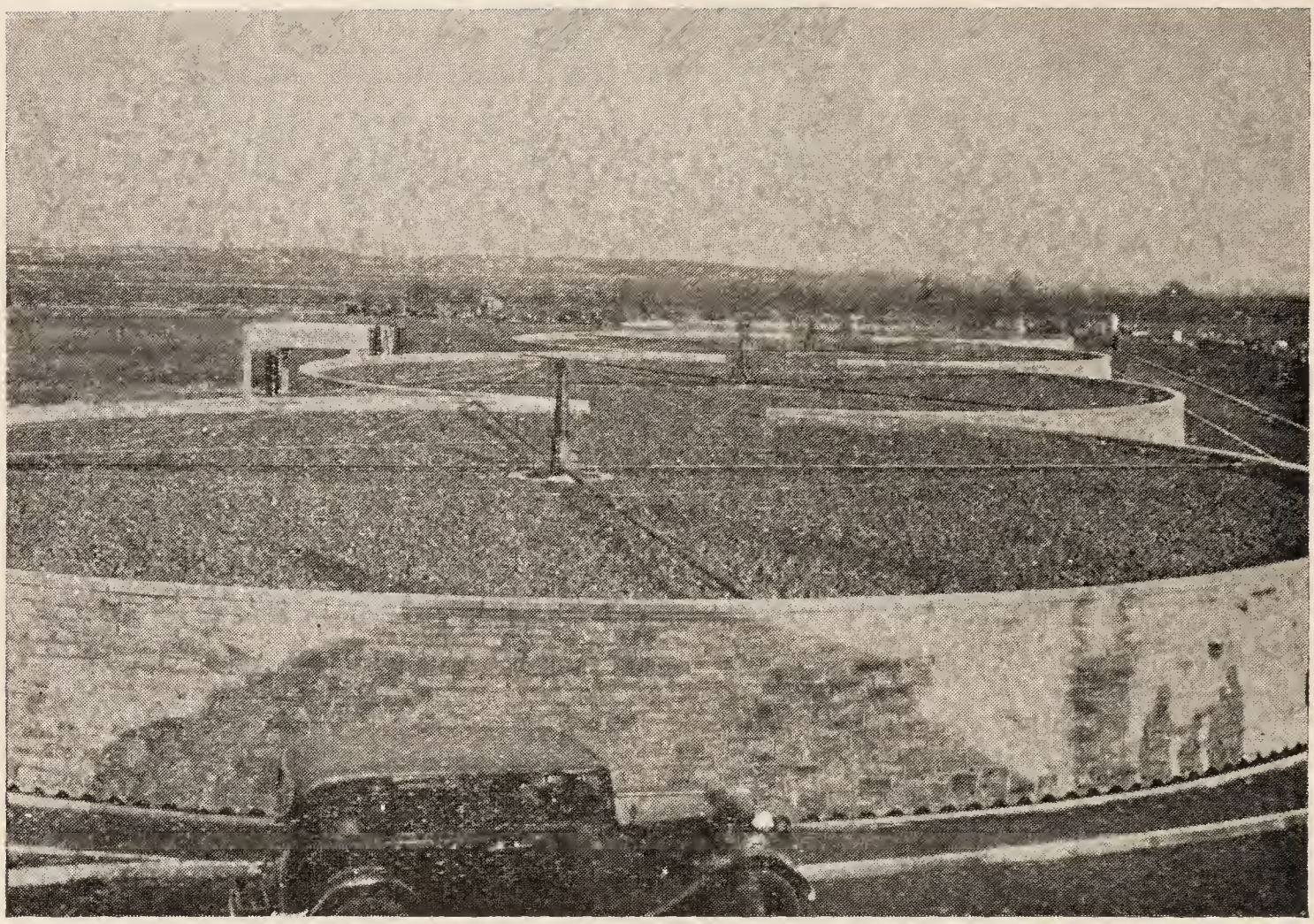


Fig. 3. View of Balancing Tank and Settlement Tanks.

CONSTRUCTIONAL WORK.

Owing to the running sand encountered during excavation for the various units the site of each had to be enclosed in steel sheet piling driven to a depth of approximately 20ft. before satisfactory progress could be made.

The pump chamber is 18ft. deep, built of concrete, with the floor reinforced against water pressure. The floor of the motor room is built of reinforced concrete, with a large central well surrounded with polished steel handrailing. The screens and motors are housed under the same building, the external walls being built of rustic brick, while the interior is lined in glazed brick, with bullnosed bricks around doors and windows. The roof is supported on steel trusses and covered with green tiles. All concrete structures standing above ground level have been finished with green cullamix, so that they will blend with the countryside as much as possible.

Approximately 13½ miles of sewers were laid, ranging in size from 9in to 45in. diameter. The Leeds and Liverpool Canal was crossed at two points. On the line of the new Dunnings Bridge Road the crossing entailed the laying of two steel tubes, 33in. and 15in. diameter. This crossing is sited on a curve, and after experiments had been carried out with a large scale plan, it was found that large barges would not be able to negotiate through half the width of the canal, i.e., 25ft. at

this point. It was therefore decided to construct the crossing during the August Bank Holiday week-end. A cofferdam of steel sheet piles was driven to a depth of 18ft. 6in., and the excavation consisted of fine slurry, clay being found at 15ft. 3in. The pipes, when laid, were surrounded with a substantial block of concrete.

Owing to the large amount of traffic only 48 hours was allowed in which to complete the work, but, due to the difficult nature of the ground met with, this time limit was slightly exceeded.

The crossing at Bridge Lane, Netherton, consisted of a 15in. steel tube laid to a depth of 15ft. This was done in two sections, one-half of the canal being left open for traffic, the work being carried out expeditiously.

The whole of the construction, involving an expenditure of approximately £92,000, has been carried out in the period of 16 months, the resident engineers being Mr. I. D. Foster, disposal works, and Mr. R. Reid and Mr. J. C. Conacher, sewers.

The total sum sanctioned by the Ministry of Health was £98,792, and an additional loan application of £3,600 for some minor extensions is at present under consideration, bringing the total amount to £102,392. The estimated loan charges are £6,827 per annum.

The repayment of this sum would have placed a heavy burden on the four parishes concerned, but assistance has been given by Lord Sefton, the principal landowner, and the Lancashire County Council.

Lord Sefton has granted a 999 years' lease of the land required for the disposal works at Thornton and the pumping station at Aintree, together with easements for all pipe lines, at a peppercorn rent, subject to the Council compensating tenants for any damage or loss of crops. He is lending the Council £10,000 at 2½ per cent. interest, repayable over a period of 30 years; and he has charged his land in the district which might be drained into the system or any extension of it at the rate of £40 per acre as and when such land is sold or leased for development and connected to the sewerage system.

The County Council has contributed under the Local Government Act, 1929, and also the Rural District Council from the General Fund on the following basis:

When the special expenses rate in the four parishes of Aintree, Netherton, Sefton and Thornton has reached two shillings in the £ for all special purposes, the County Council and the Rural District Council will each contribute 50 per cent. of the balance of the loan charges. The estimated amount of these contributions for the financial year 1937-38 is £2,500 from each authority.

Work was carried out by contract, the successful tender being that of Messrs. Lane Bros. Mansfield. The table at the foot hereof gives the names of sub-contractors and suppliers of plant and equipment.

SUB-CONTRACTORS AND SUPPLIERS OF PLANT AND EQUIPMENT.

Pumping Plant and Screens.—Messrs. Adams Hydraulics Ltd., York.
Distributors and Valves, etc.— Do. do.
Recorder.—Messrs. Lea Recorder Co. Ltd., Manchester.
Switchgear.—Messrs. Brookhirst Switchgear Co., Chester.
Lifting Gear.—Messrs. Herbert Morris Ltd., Loughborough.
Filter Media.—Messrs. Summerfield & Lang Ltd., Liverpool.
Filter Tiles.—Messrs. Naylor Bros. Ltd., Huddersfield.
Pipes.—Messrs. Stanton Iron Works Co. Ltd., Nottingham.
Granite.—Messrs. Penmaenmawr & Welsh Granite Co.
Cement.—Messrs. Earles Cement Ltd.

In the part of Aughton where there is a system of sewers, excrement is largely disposed of by water carriage. The watershed is drained to the Sewage Farm on the banks of Sudell Brook at the south-west boundary of the parish.

On entry, the sewage passes through a detritus tank, then on through the screening chamber and precipitation tanks. The tank effluent is dealt with by two revolving sprinklers on percolating beds, and, when suitable, on the land filtration area. The final effluent is discharged into the brook, which eventually joins the River Alt some miles lower down stream. The daily dry weather flow at these works is approximately 60,000 gallons.

An electric motor pump is installed for the purpose of pumping sludge from the sludge well to the lagoons.

In Banks a number of private septic tanks and filters have been put down, and these have proved satisfactory. The remainder of the houses not so completed have cesspools, the emptying of which is undertaken by the Council. The contents are sprayed on agricultural land by arrangement with local farmers.

In Lydiate most of the sewage from the old property is dealt with by cesspools. The portion of the township between the Maghull boundary and Lollies Bridge has become urbanised owing to the opening out of Moss Lane, the provision of bus and electricity services and the consequent development of a large housing estate. This area has now main drainage and is connected to the Maghull sewerage system near Bower's Garage.

In the remaining parishes in the District, excrement is largely disposed of by means of either small private septic tanks and filters or cesspools.

In the parish of Maghull, in connection with the State Institution there is a private installation, the effluent from which discharges into the Sudell Brook.

In Aintree the British Enka Artificial Silk Works Co. Ltd. have their own installation. The effluent from this is discharged into the River Alt.

There have been no extensions in Tarleton since the last extension through the Village and along Gorse Lane.

The parishes of Hesketh-with-Becconsall, North Meols, portions of Scarisbrick and Halsall, and the northern portion of Tarleton adjacent to Hesketh-with-Becconsall, have not yet had main drainage made available, and these districts are still dependent upon either cesspools or septic tanks.

In Melling there is prospect of industrial and residential development in the Waddicar Lane district, and the question of sewerage and sewage disposal works to deal with this area is under consideration.

Maghull continues to develop fairly rapidly and it has been found necessary to extend the works. A brief description of this extension is appended.

Summarising the population figures, the present population in Lydiate and Maghull is 5,711. In Maghull there will very shortly be a further, 2,828 persons, making a total of present and immediate future population of 8,539. Included in this total are the populations of two important Institutions: the Henry Cox Homes in Sefton Lane and the Ministry of Pensions Moss Side State Institution, namely 350 and 328 persons respectively. As the water consumption in these Institutions is approximately double the assumed average of 25 gallons per head per day, and the Moss Side Institution is likely to be doubled in 10 years time, the flow will be equivalent to an extra population of 350 plus 656, making the total population figure of 9,545.

In view of the recent rapid development, with the considerable further areas ready for building, it is considered that the capacity of the sewage disposal works should be equivalent to a population of 12,500. The present works' capacity is 3,300, so the extensions needed are based on a population of 9,200.

Certain amendments to the present works are required, with the addition of the new section. It has been decided to fit automatic mechanically operated screens in the existing screening chamber, as owing to the large increased flow, the existing bar screens have to be raked at frequent intervals. A new pump is to be fitted in the sewage pumping station in order to bring up the total capacity of the pumps to 1,302 gallons per minute, i.e., a maximum emergency pumping rate of 6 D.W.F. on a population of 12,500. Space was left for this new pump when the present works were designed.

Sewage will be pumped to a reinforced concrete balancing tank on piers above ground. In this tank will be two constant flow floating arm draw-off pipes, one supplying the existing unit and the other the proposed extension. The balancing tank is incorporated in order that the flow to the works might synchonize as nearly as possible with the flow in the outfall sewer. The floating arm supplying the proposed extension is to draw-off at the rate of 1 D.W.F. for a population of 9,200, or 9,580 gallons per hour, while that to the existing works is to supply at the rate of 1 D.W.F. for a population of 3,300, or 3,440 gallons per hour.

When the flow exceeds 1 D.W.F. of the total population, namely 12,500, overflow weirs come into action. These are built on the side walls of the tank and discharge into the channels supplying the existing works and the proposed extension. They are designed so that when the depth of flow over the weirs is 3 inches the discharges are at the rate of 2 D.W.F. of the capacities of the respective units. Should the flow at any time exceed the rate of 3 D.W.F. of the total Capacity there, then an emergency weir comes into operation, which discharges the surplus to the proposed extension. The floating arm draw-off and the 2 D.W.F. over-flow weir supplying the extension are to be made capable of adjustment so that the existing works deal with the portion from the population of 3,300 while the extension deals only with the balance.

The sewage passes down a 15 inch pipe to the inlet to the proposed simplex surface aeration unity. At the outlet of the above pipe will be fitted an automatic penstock electrically controlled by a time switch with a view to closing down the aeration plant during the night period, and such small flows as there may be being treated by the existing works. The sewage then flows into a preliminary settling tank of the Dortmund type, the capacity being 4 hrs. D.W.F. or 38,400 gallons. Sludge is to be withdrawn under hydrostatic head and pass to the sludge pumping station.

The tank effluent then flows along a flume recorder channel to the aeration tanks, which are of a capacity of 153,400 gallons or 16 hrs. D.W.F. For final settlement of suspended matter the effluent passes into duplicate final settlement tanks giving a retention of 6 hrs. D.W.F. or a total capacity of 57,500 gallons. Each final settlement tank is fitted with a sludge lifter which discharges the sludge into a sight box from which branches are taken to a 6 inch common sludge return main to the inlet end of the aeration tanks Surplus sludge is withdrawn under hydrostatic head into a sludge manhole at the side of the tanks and from here gravitates to the sludge pumping station. A portion of the sludge is pumped back to the inlet to the preliminary settling tank, thereby settling out all surplus activated sludge with the raw sludge normally produced in the tank, resulting in a more consolidated mass.

From the balancing tank sewage flows down a flume recorder channel to a 9 inch pipe discharging into the inlet manholes to the existing settling tanks. The existing tanks are of the Dortmund type and at the present time the sewage is pumped in at one end and discharges over a weir at the far end, and into the feed chamber to the filters. The inlet and outlet flow arrangement of these tanks are to be improved.

The proposal is that the sewage should pass down a 9 inch pipe into a deflector box fixed in the middle of each tank and discharge into channels around the four walls.

Certain alterations have been found necessary at the humus tanks and to the desludging arrangements. It is proposed to adandon the existing sludge beds which consist of underdrained clinker beds with earth

banks. When sludge is pumped onto the beds the sludge liquor percolates through these banks and runs off over the surrounding ground, only a small amount finding its way to the sludge liquor drain. Under the new proposals all sludge both from the existing works and the proposed extension is to drain to a sludge pumping station from which it is to be pumped to the proposed sludge digestion tanks, except for a small amount of activated sludge which will be returned to the aeration unit as previously mentioned.

Considerable difficulty has been found in disposing of sludge from the present works, and with the rapidly increasing population a sludge digestion plant has been considered essential. The close proximity of dwelling houses has a considerable bearing on the matter.

The sludge digestion tank will have a capacity of 25,000 cubic feet and is to be fitted with mechanism supplied by the Dorr-Oliver Co. Ltd. Sludge liquor will overflow and discharge by gravity to the screening chamber at the inlet to the works. The sludge itself will be discharged under hydrostatic head along a 6 inch main to the sludge beds. These consist of 10 shallow concrete basins filled with an average of 15 inches of clinker and underdrained with agricultural tiles, their cross area being 1,250 sq. yds., or 1 sq. yd. to 10 persons. The sludge liquor return drain connects to the main outfall sewer to the works.

Certain houses in Little Altcar are connected to the Formby sewerage system. At the time when the Formby sewerage system was being carried out certain land was required for disposal works, and the owner of the said land sold it on condition that certain areas of his land situate in Little Altcar should drain into the Formby sewerage system.

A small installation serves the greater part of Rufford village. Treatment is by means of septic tank and revolving sprinklers over percolating filters.

The following conversions have been effected during the year:—

Privies to water closets	95
Privies to pails	7
Pails to water closets	10
Fixed receptacles to metal bins	182

During the year the following connections to the sewer were made:—

Altcar	17
Aintree	132
Aughton	11
Ford	42
Lydiate	86
Maghull	280
Sefton	—
Tarleton	24
Thornton	21

The total number of houses now connected is 3,758.

SANITARY CONVENIENCES, 1937.

	Closet Accommodation		Refuse Accommodation			
	W.C.'s	Pails	Privies	Dry Ashpits	Privy Ashpits	Metal Bins
Aintree	320	1	18	2	16	320
Altcar	86	18	77	15	75	85
Aughton	803	5	108	59	108	749
Bickerstaffe ...	55	70	229	14	229	115
Bispham	2	13	51	1	51	7
Downholland ...	26	15	130	14	130	26
Ford	52	6	14	4	14	47
Halsall	251	51	276	29	262	249
Hesketh Bank ...	215	130	169	2	167	329
Ince Blundell ...	63	1	56	25	51	36
Lydiate	244	9	165	15	165	235
Maghull	1616	39	64	35	64	1612
Melling	190	18	139	—	131	208
Netherton	779	3	37	4	37	766
North Meols ...	264	211	220	2	209	430
Rufford	122	50	108	6	108	172
Scarisbrick ...	363	59	340	13	340	403
Sefton	69	1	51	6	48	57
Simonswood ...	22	1	55	3	55	18
Tarleton	310	144	306	8	305	463
Thornton	239	1	38	2	37	238
Totals ...	6091	846	2651	259	2602	6565

LAND DRAINAGE.

The drainage of the low-lying land in the Rural District has of recent years been under the control of the River Douglas, River Alt, and Crossens Catchment Boards. A full description of the pumping plant and areas of operation of these authorities was given in the Report for 1934.

There is no doubt that since the setting up of various Catchment and Drainage Boards in this area great improvement has taken place; in an area situate as West Lancashire is, it is most necessary that this important question should be dealt with by Boards and not by individuals.

It is noteworthy that there are in the Rural District 137.21 miles of rivers and streams, 26.39 miles representing the total length of rivers.

The various lengths are detailed below:—

RIVERS.

	Mileage.
River Alt	10.7
River Douglas	6.39
River Ribble	9.3
	26.39

STREAMS AND SLUICES.

	Miles.
BANKS. Sluice, New Lane to Crossens	1.4
BISPHAM—	
Bentley Brook	1.04
Mill Ditch	0.97
HESKETH BANK—	
Hundred End Gutter, River Ribble to Taylor's Meanygate	2.90
Centre Drain	2.45
—and Tarleton Carr Hey and Dunkirk Dib.	4.37
—and Tarleton—The Runner, Bolton's Meanygate, Long Ditch Bridge to Six Field Coverts	4.55
TARLETON. Strine Brook, Sollom Moss Side Farm to Old River	1.00
RUFFORD—	
The Sluice	2.90
Catch Water Drain, Spring Wood, to the Sluice	3.57
ALTCAR. Tongues and Within Watercourses	1.77
DOWNHOLLAND—	
Chisnall and Wanisher Rosemary Lane to Barton Brook...	2.72
Downholland Brook, River Alt to Bangor's Green ...	6.87
Fine Jane's Brook, Downholland Brook to Crossens ...	7.52
HALSALL—	
New Cut Brook and Old Canal, Halsall House to Sandy Brook	3.25
Boundary Brook, Old Canal to Birkdale Boundary ...	2.10
Sandy Brook, Boundary of Ainsdale to junction of Boundary Brook, Birkdale Sewage Farm	3.25
SCARISBRICK—	
The Sluice from Berry House to Boundary at Crossens...	4.60
Black Brook, Sandy Brook, Drummersdale Drain, from North Moor Pits to Crossens	8.22
Boundary Drains junction of Sluice to Boundary Brook near Blowick Gas Works	3.30
Back Drain, Boundary of Tarlscough to Crossens	4.60
Snigpot and Bullen's Brook	1.44
Eas, and Tarleton Brook, Marsh's Lane, to junction of of Black Brook, Poole Hey Lane	5.00

AUGHTON—	
Sudeil and Lydiate Brook to Downholland Brook ...	10.70
Cock Beck Brook, Doctor's Bridge to Sudell Brook ...	2.76
BICKERSTAFFE. Knoll Brook, Long Lane Farm, to Cunscough Brook	2.00
MELLING. Bank and Simonswood Brook	4.70
MAGHULL—	
Maghull Brook, Old Lane, to River Alt	2.75
Whinney Brook	2.00
Mill Race	1.30
SEFTON—	
Rimrose Brook, Boundary of City of Liverpool to Boundary of Crosby and Litherland	3.00
AINTREE. Beecher's Brook	0.47
THORNTON. Hunt's Brook, Thornton Wood, to River Alt ...	1.35
Total Miles ...	110.82

Number of Sewage Works discharging into Rivers and Streams:—

(1) Aughton Disposal Works discharges into Sudell Brook.

(2) Maghull Disposal Works discharges into Dover's Brook.

(3) Thornton Disposal Works discharges into Hunt's Brook.

(4) Tarleton Disposal Works discharges into a Back Drain which flows into the River Douglas.

(5) Rufford Disposal Works discharges into the Leeds and Liverpool Canal.

(6) Bescar Lane Disposal Works discharges into Drummersdale Brook.

Number of Manufacturers discharging effluent into Rivers and Streams:

(1) An Artificial Silk Works discharges effluent into the River Alt.

(2) A Cabinet Maker's Works discharges effluent into a Watercourse near the Canal, Melling.

(3) A Weaving Mill at Tarleton discharges effluent into a Back Drain leading to the River Douglas.

Number of Industrial Premises connected to Public Sewers:

(1) A Potato Crisp Factory at Aughton.

(2) A Sheet Metal Works at Netherton.

(3) A Printing Works at Netherton and others in this vicinity remain to be agreed.

NOTE.—Southport Corporation discharge effluent from the Isolation Hospital into Black Brook, Scarisbrick, and storm overflow into Fine Jane's Brook at Segar's Lane.

Private Sewers from premises in Tarleton discharge direct into the River Douglas.

SCAVENGING.

Scavenging schemes are in operation in the townships of Aughton, Bickerstaffe, Halsall, Hesketh Bank, Lydiate, Maghull, Melling, Netherton, North Meols, Rufford, Scarisbrick, Tarleton and Thornton. All scavenging is done under contract.

The whole of the township of Aughton is scavenged, with the exception of the scattered area of Clieves Hills.

Some houses in Halsall, which are adjacent to the County Borough of Southport, are scavenged by agreement with the Health Department of the Southport Corporation. The central area of Halsall is now regularly scavenged under contract with a local farmer.

Schemes for Maghull and the adjacent portion of Lydiate, and for Tarleton, are working satisfactorily.

Scavenging was commenced during 1934 in Bickerstaffe, Hesketh Bank, Melling and Netherton.

Early in 1937 a scavenging scheme for Aintree was put into operation but until then scavenging was regularly carried out by local carters, with whom arrangements were made by the residents.

It is now correct to say that all the urbanised areas in the Rural District are scavenged.

The Council rent from the London, Midland and Scottish Railway Company, a low-lying tract of land on the east side of Rufford Station for refuse disposal.

A disused quarry in Melling has been purchased and this is sufficiently large to provide for the needs of the southern townships for many years. The Council employ the services of a rat catcher in connection with this quarry.

It is gratifying to be able to report that the objectionable practice of indiscriminate tipping by householders has now largely been eliminated by the establishment of controlled tipping throughout the District.

The portion of the District to the south of Ormskirk is now catered for by the Melling Quarry tip; the northern area by five tips in New Lane, Tarleton; Church Road, Rufford; Gravel Lane, Banks; Drummersdale, Scarisbrick; and Carmoss Lane, Halsall, while the small tip in New Way, Bickerstaffe, has been retained for that eastern side and is also being run on a controlled tipping basis.

Thus by lessening the number of tips it is now possible adequately to control operations with efficiency and with the minimum number of staff.

REPORT OF THE SANITARY INSPECTORS

FOR THE

WEST LANCASHIRE RURAL DISTRICT COUNCIL.

YEAR 1937.

AINTREE.

Number of nuisances found	4
Number of nuisances abated	4
Preliminary notices served	1
Preliminary notices complied with	1
Nuisances abated without service of notice	3
Water certificates granted	109
Registered dairies, etc.	3
Limewashing required	1
Conversions:—	
Privies to water closets	1
Privy ashpit to bin	1
Total number of inspections	132

ALTCAR.

Water certificates granted	27
Registered dairies, etc.	1
Limewashing required	1
Registered workshops	3
Carcases examined	34
Weight of meat condemned:—	
Tuberculosis meat	6 lbs.
Other diseased meat	nil
Scavenging:—	
Number of receptacles emptied	1,629
Total number of inspections...	69

AUGHTON.

Number of nuisances found	85
Number of nuisances abated	87
Preliminary notices served	20
Preliminary notices complied with...	19
Nuisances abated without service of notice	37

Water certificates granted ...	22
Registered slaughterhouses ...	1
Registered dairies, etc. ...	15
Registered dairies, new ...	1
Registered dairies abolished ...	1
Registered dairies transferred ...	1
Limewashing required ...	5
Registered workshops ...	18
Registered workshops, new ...	2
Registered workshops abolished ...	1
Schools visited ...	2
Carcases examined ...	308
Weight of meat condemned...	...6 cwts. 27 lbs.
Tuberculous meat ...	...2 cwts. 19 lbs.
Other diseased meat ...	...4 cwts. 8 lbs.
Scavenging:—	
Number of receptacles emptied ...	36,586
Conversions:—	
Privies to water closets ...	2
Privy ashpits to bins ...	2
Dry ashpits to bins ...	64
Total number of inspections ...	865

BICKERSTAFFE.

Number of nuisances found ...	15
Number of nuisances abated ...	19
Nuisances abated without service of notice ...	19
Water certificates granted ...	2
Registered dairies, etc. ...	10
Limewashing required ...	5
Registered workshops ...	9
Schools visited ...	1
Carcases examined ...	59
Weight of meat condemned ...	1 cwt. 46 lbs.
Tuberculous meat ...	— —
Other diseased meat ...	1 cwt. 46 lbs.
Scavenging:—	
Receptacles emptied ...	6,768
Total number of inspections ...	157

BISPHAM.

Number of nuisances found ...	3
Number of nuisances abated ...	3
Nuisances abated without service of notice ...	3
Samples obtained for analysis ...	9
Water supplies P.H.A. 1875 ...	6
Registered dairies ...	4

Limewashing required	1
Registered workshops	3
Schools visited	1
Carcases examined	12
Weight of meat condemned...	1 cwt. 88 lbs.
Tuberculous meat	1 cwt. 88 lbs.
Other diseases	Nil.
Total number of inspections	50

DOWNHOLLAND.

Number of nuisances found	5
Number of nuisances abated	5
Nuisances abated without service of notice	5
Samples for analysis...	2
Water supplies P.H.A. 1875	3
Registered dairies	1
Limewashing required	1
Registered workshops	3
Carcases examined	149
Weight of meat condemned... ... ...2 cwts.	52 lbs.
Tuberculous meat ... ...1 cwt.	67 lbs.
Other diseased meat	97 lbs.
Schools visited	1
Total number of inspections	175

FORD.

Number of nuisances found...	2
Number of nuisances abated	2
Preliminary notices served	2
Preliminary notices complied with	2
Registered dairies	1
Registered dairies abolished	1
Limewashing required	1
Registered slaughterhouses	1
Carcases examined	456
Weight of meat condemned	22 cwts. 105 lbs.
Tuberculous meat	14 cwts. 74 lbs.
Other diseased meat	8 cwts. 31 lbs.
Total number of inspections	567

HALSALL.

Number of nuisances found...	35
Number of nuisances abated	35
Preliminary notices served	11
Preliminary notices complied with...	12

Nuisances abated without service of notice	15
Drains tested	1
Samples obtained for analysis	4
Water certificates granted	7
Water supplies P.H.A. 1875	3
Registered dairies, etc.	16
New registrations	1
Registrations abolished	1
Registrations transferred	1
Limewashing required	3
Registered workshops	5
Limewashing	1
Schools visited	1
Carcases examined	240
Weight of meat condemned ... ...6 cwts.	110 lbs.
Tuberculous meat ... ...2 cwts.	87 lbs.
Other diseased meat ... ...4 cwts.	23 lbs.
Scavenging:—	
Number of receptacles emptied	7,893
Conversions:—	
Privies to pails	1
Total number of inspections	392

HESKETH BANK.

Number of nuisances found	31
Number of nuisances abated	31
Preliminary notices served	11
Preliminary notices complied with...	10
Nuisances abated without service of notice	16
Samples obtained for analysis	1
Water certificates granted	12
Registered dairies, etc.	7
New registrations	1
Limewashing required	2
Workshops registered	6
Transferred	1
Limewashing required	1
Schools visited	1
Carcases examined	164
Weight of meat condemned... ... ... 1 cwt.	38 lbs.
Tuberculous meat	14 lbs.
Other diseased meat ... ... 1 cwt.	24 lbs.
Conversions:—	
Privies to pails	1
Ashpits to bins	1
Scavenging:—	
Receptacles emptied	13,935
Total number of inspections	275

INCE BLUNDELL.

Number of nuisances found	1
Number of nuisances abated	1
Preliminary notices served	1
Preliminary notices complied with	1
Water certificates granted	1
Registered dairies, etc.	3
Limewashing required	1
Registered workshops	3
Samples for analysis	6
Schools visited	1
Carcases examined	27
Condemned meat	Nil
Total number of inspections	49

LYDIATE

Number of nuisances found	45
Number of nuisances abated	44
Preliminary notices served	2
Preliminary notices complied with	3
Statutory notices served	1
Statutory notices complied with	1
Nuisances abated without service of notice	30
Drains tested	23
Samples for analysis...	2
Water certificates granted	1
Registered slaughterhouses	1
Registered dairies	1
Limewashing required	1
Registered workshops	7
Schools visited	2
Carcases examined	107
Weight of meat condemned	55 lbs.
Tuberculous meat	43 lbs.
Other diseased meat	12 lbs.
Conversions:—	
Privies to water closets	25
Ashpits to bins	25
Scavenging:—	
Receptacles emptied	5,572
Total number of inspections	309

MAGHULL.

Number of nuisances found...	36
Number of nuisances abated	47
Preliminary notices served	5
Preliminary notices complied with...	5
Nuisances abated without service of notice	3
Water certificates granted	329
Samples for analysis	2
Registered dairies, etc.	7
Registered Dairies, new	2
Registered dairies abolished	1
Limewashing required	9
Registered workshops	13
Registered workshops, new	4
Registered workshops abolished	5
Schools visited	2
Registered slaughterhouses	2
Carcases examined	359
Weight of meat condemned...	96 lbs.
Tuberculous meat	10 lbs.
Other diseased meat	86 lbs.
Scavenging:—	
Number of receptacles emptied	36,578
Conversions:—	
Privies to water closets	29
Ashpits to bins	29
Total number of inspections...	1,101

MELLING.

Number of nuisances found...	14
Number of nuisances abated	23
Preliminary notices served	5
Preliminary notices complied with...	8
Nuisances abated without service of notice	2
Water certificates granted	4
Samples for analysis	7
Registered dairies, etc.	5
Limewashing required	1
Defective floors	1
Registered workshops	2
Carcases examined	10
Weight of meat condemned	Nil
Scavenging:—	
Receptacles emptied	5,852
Total inspections	198

NETHERTON

Number of nuisances found	55
Number of nuisances abated	54
Preliminary notices served	2
Preliminary notices complied with...	1
Statutory notices served	2
Statutory notices complied with	1
Nuisance abated without service of notice	51
Water certificates granted	82
Registered dairies, etc.	3
Limewashing required	1
Schools visited	1
Offensive Trades	1
Scavenging:—	
Receptacles emptied	18,797
Conversions:—	
Privies to water closets	17
Dry ashpits to bins	30
Ashpits to bins	17
Total number of inspections...	385

NORTH MEOLS (RURAL.

Number of nuisances found	56
Number of nuisances abated	58
Preliminary notices served	12
Preliminary notices complied with	15
Nuisances abated without service of notice	24
Samples obtained for analysis	4
Water certificates granted	6
Registered dairies, etc.	20
New registrations	3
Abolished	2
Limewashing required	4
Registered workshops...	10
Registered workshops closed	1
Limewashing required	2
Carcases examined	239
Weight of meat condemned ... ...6 cwts. 26 lbs.	
Tuberculous meat ... ...2 cwts. 78 lbs.	
Other diseased meat ... ...2 cwts. 60 lbs.	
Conversions:—	
Privies to pails	3
Privies to water closets	8
Pails to water closets	1
Scavenging:—	
Receptacles emptied	17,465
Schools visited	2
Total number of inspections	431

RUFFORD.

Number of nuisances found	11
Number of nuisances abated...	11
Preliminary notices served	4
Preliminary notices complied with	4
Nuisances abated without service of notice	5
Samples obtained for analysis	3
Water certificates granted	9
Registered dairies, etc.	7
New registrations	1
Transfers	1
Limewashing required	1
Registered workshops	13
Limewashing required	1
Schools visited	2
Carcases examined	95
Weight of meat condemned...	...4 cwts. 7 lbs.
Tuberculous meat	...1 cwt. 75 lbs.
Other diseased meat	...2 cwts. 44 lbs.
Conversions :—	
Dry ashpits to bins	2
Scavenging :—	
Receptacles emptied	6,174
Total number of inspections	184

SCARISBRICK.

Number of nuisances found	47
Number of nuisances abated	46
Preliminary notices served	16
Preliminary notices complied with	14
Nuisances abated without service of notice	22
Samples obtained for analysis	13
Water certificates granted	7
Water supplies P.H.A. 1875	1
Registered dairies etc.	15
Limewashing required	2
Registered workshops	15
Limewashing required	3
Schools visited	3
Carcases examined	342
Weight of meat condemned...	18 cwts. 107 lbs.
Tuberculous meat	5 cwts. 19 lbs.
Other diseased meat	13 cwts. 88 lbs.
Conversions :—	
Privies to pails	1
Ashpit to bin	1
Scavenging :—	
Receptacles emptied	13,364
Total number of inspections	561

SEFTON.

Number of nuisances found	3
Number of nuisances abated	3
Preliminary notices served	1
Preliminary notices complied with	1
Nuisances abated without service of notice	1
Registered dairies	4
Limewashing required	2
Registered slaughterhouses	2
Registered workshops	2
Schools visited	1
Samples for analysis	4
Carcases examined	124
Weight of meat condemned	3 cwts. 63 lbs.
Tuberculous meat	1 cwt. 17 lbs.
Other diseased meat	2 cwts. 46 lbs.
Total number of inspections	253

SIMONSWOOD.

Water certificates granted	1
Registered dairies	4
Limewashing required	1
Registered workshops	1
Carcases examined	25
Weight of meat condemned	20 lbs.
Tuberculous meat	20 lbs.
Other diseased meat	Nil
Total number of inspections	36

TARLETON.

Number of nuisances found	33
Number of nuisances abated	31
Preliminary notices served	13
Preliminary notices complied with	11
Nuisances abated without service of notice	14
Samples obtained for analysis	4
Water certificates granted	22
Water supplies P.H.A. 1875	1
Registered dairies, etc.	14
Transferred	1
Limewashing required	2
Registered workshops	20
Limewashing required	3
Slaughterhouses (licensed)	3
Schools visited	3
Carcases examined	520

Weight of meat condemned	...6 cwts. 56 lbs.
Tuberculous meat	...3 cwts. 74 lbs.
Other diseased meat	...2 cwts. 94 lbs.
Conversions:—	
Privies to pails	1
Privies to water closets	9
Pails to water closets	9
Ashpits to bins	6
Scavenging:—	
Receptacles emptied	12,305
Total number of inspections	769

THORNTON.

Number of nuisances found	5
Number of nuisances abated	5
Abated without notice	5
Water Certificates granted	41
Registered dairies	4
Limewashing required	1
Registered workshops	1
Registered slaughterhouses	1
Carcases examined	615
Weight of meat condemned	13 cwts. 105 lbs.
Tuberculous meat	12 cwts. 19 lbs.
Other diseased meat	1 cwt. 86 lbs.
Scavenging:—	
Receptacles emptied	5,903
Conversions:—	
Privies to water closets	3
Ashpits to bins	3
Total number of inspections	5

TABLE SHOWING THE NUMBER OF MATTERS DEALT WITH BY THE SANITARY INSPECTORS DURING THE YEAR 1937.

1937.	Nuisances found	Nuisances abated	Inspections	Drains Tested	Samples obtained	Water Certificates	Houses Supplied P.H. Act, 1875	Slaughter-houses	Inspections	Dairies, etc.	Inspections	Workshops	Inspections	Scavenging. No. of Receptacles Emptied	Preliminaay Notices served	Complied With	Statutory Notices served	Complied With	Schools visited	Carcases Examined	Weight of meat Condemned		Inspections
																					cwt.	lbs.	
Aintree ...	4	4	13	—	—	109	—	—	—	3	6	—	—	5607	1	1	—	—	—	—	—	—	—
Altcar	—	—	—	—	—	27	—	—	—	1	2	3	6	1692	—	—	—	—	—	34	—	6	34
Aughton	85	87	428	—	—	22	—	1	39	15	20	18	40	36586	20	19	—	—	2	308	6	27	308
Bickerstaffe ...	15	19	60	—	—	2	—	—	—	10	15	9	19	6768	—	—	—	—	1	59	1	46	59
Bispham	3	3	6	—	9	—	6	—	—	4	8	3	7	—	—		—	—	1	12	1	88	12
Downholland ...	5	5	9	—	2	—	3	—	—	1	2	3	6	—	—	—	—	—	1	149	2	52	149
Ford	2	2	29	—	—	40	—	1	78	1	4	—	—	—	2	2	—	—	—	456	22	105	456
Halsall	35	35	59	1	4	7	3	—	—	16	39	5	10	7893	11	12	—	—	1	240	6	110	240
HeskethBank ..	31	31	57	—	1	12	—	—	—	7	17	6	14	13935	11	10	—	—	1	164	1	38	164
Ince Blundell...	1	1	2	—	6	1	—	—	—	3	6	3	6	—	1	1	—	—	1	27	—	—	27
Lydiate	45	44	175	23	2	1	—	1	16	1	6	7	16	5572	2	3	—	—	2	107	—	55	107
Maghull	36	47	257	—	2	329	—	2	101	7	12	13	36	36578	5	5	—	—	2	359	—	96	359
Melling	14	23	143	—	7	4	—	—	—	5	30	2	4	5852	5	8	—	—	2	10	—	—	10
Netherton ...	55	54	295	—	—	82	—	—	—	3	6	—	—	18798	2	1	2	1	1	—	—	—	—
North Meols ...	56	58	98	—	4	6	—	—	—	20	37	10	24	17465	12	15	—	—	2	239	6	26	239
Rufford	11	11	23	—	3	9	—	—	—	7	15	13	27	6174	4	4	—	—	2	95	4	7	95
Scarisbrick ...	47	46	83	—	13	7	1	—	—	15	32	15	31	13364	16	14	—	—	3	342	18	107	342
Sefton	3	2	9	—	4	—	-	2	95	4	12	2	4	—	1	1		—	1	124	3	63	124
Simonswood ...	—	—	—	—	—	1	—	—	—	4	8	1	2	—	—	—	-	—	—	25	—	20	25
Tarleton	33	31	59	—	4	22	1	3	152	14	38	20	43	12305	13	11	-	—	3	520	6	56	520
Thornton ...	5	5	20	—	—	41	—	1	84	4	12	1	3	5903	—	—	—	—	—	615	13	105	615
TOTALS ...	486	508	1825	24	61	722	14	11	565	145	327	134	298	194492	106	107	2	1	26	3885	97	111	3885

CANAL BOATS.

The Canal Boat Inspector for the Rural District of West Lancashire is Mr. T. G. H. Hunter, Council Offices, Derby Street, Ormskirk. No special remuneration is paid for this work.

The arrangements made for the inspection of the boats is, simply, that they are boarded as they pass along the canal.

Six boats were inspected and one was found not to be properly marked and lettered in accordance with the Act and Regulations and a complaint notice was served on the owner of the boat to have the necessary work done.

All the boats were found to be in good condition and very clean.

No case of infectious disease was encountered.

SHOPS ACT, 1934.

The major portion of this Act is administered by Shops Authorities, and a rural council is not a shops authority within its meaning. The duties devolving on such an authority are in respect of ventilation, temperature, and sanitary conveniences only. Washing facilities, even, are not included; they are a matter for the shops authority.

The Act is difficult of administration in a rural district, where the great majority of the shops are occupied with a dwelling-house. Multiple shops and lock up shops are very few in number.

Ventilation, generally, is well maintained. Most shops are provided with hopper windows or skylights. Temperature, however, is another matter, as it is well-nigh impossible to keep an even temperature in a single-roomed shop where the door is in direct communication with the external air and is constantly opening and shutting.

Sanitary conveniences must be provided *in the shop* unless a certificate of exemption is provided by the local authority. Such a certificate may only be granted where the authority is satisfied that, by reason of restricted accommodation or other special circumstances affecting the shop, it is reasonable that a certificate should be in force, and that suitable and sufficient sanitary conveniences are otherwise conveniently available.

In practice it is found that most shops are operated by members of the family occupying the house with it, and even when assistants from elsewhere are employed, the house conveniences are used, and, therefore an exemption certificate should be granted in almost every case.

It would appear to be expedient to issue such a certificate in the case of nearly every shop in the whole of the West Lancashire Rural District, including the many cases in which occupiers of cottages in

the country carry on a small business in the front parlour. Even in the rapidly developing areas where houses are going up in hundreds at a time, all the new shops are occupied with the house. There is only one large store built separately as such, and this has excellent modern sanitary accommodation for males and females built a few yards away but within the same curtilage.

SCHOOL HYGIENE.

Medical inspection of school children is undertaken by the School Medical Department of the Lancashire County Council. The Health Department of the Rural Council is responsible for the control of infectious disease amongst the scholars and for the efficient sanitary condition of the school premises.

Weekly returns of new cases of infectious disease are received from the School Attendance Officers. These returns are of great value, and are utilised fully.

The last few years have seen notable improvements in the sanitary condition of all the schools in the area.

On the subject of school premises, the following comments are made:—

Aughton Christ Church School.—Again it is necessary to report that nothing has been done with regard to levelling and re-surfacing of the playground. Large pot-holes, sharp clinkers and a steep slope all combine to produce injuries to children almost daily.

Aughton Parochial School.—Cloakroom walls are damp and require attention, particularly as in these old-type cloakrooms coats are hung against the walls.

At **Bispham Free Grammar School** the cloakroom floor has been taken up and a new concrete floor laid.

The entrance doorway at **Downholland (Haskayne) C.E. School** has been widened. Chimneys which smoked have been rebuilt and put into complete order.

At **Halsall C.E. Central School** large sums have been expended on the concreting of the playground, thereby effecting an important contribution to the facilities for organised games and physical education. The school has been re-decorated inside, a classroom fitted up for the use of the epidiascope, and new sanitary fittings provided in the boys' lavatories.

At **Hesketh Bank C.E. School** the heating arrangements fall short of requirements. During the winter months, temperatures below 50 deg. F. at 9 a.m. are quite common.

Ince Blundell R.C. School has inadequate lighting in the Infants' room. An improvement could be effected by the provision of a skylight or by inserting glass in the top half of the partition.

The township of Maghull is developing rapidly, and school accommodation has become inadequate. As a temporary measure, and until the scheduled new school is built, a wooden Council School has been added to the **Maghull C.E. Central School**. This wooden building has two classrooms with cloakrooms, heated with coke stoves.

At **Melling,** the school 'bus has proved of value in saving children a wetting in bad weather. Many of these children have long distances to travel. The Headmaster of the **C.E. School** has arranged for the use of a field for organised games. A County Library scheme has been commenced. "Elsan" closets have been provided at the **R.C. School.**

Netherton R.C. School has had notable work done. New cloakrooms with modern washing facilities have been provided on either side of the school. Electric light has been installed throughout. Internal decorations have been done. Further improvements to playgrounds and sanitation are pending.

Electricity has been installed at **North Meols P.M. School.**

St. Stephen's C.E. School at North Meols has been altered to provide more classrooms. New cloakrooms and washbowls have been installed. A new inside corridor facilitates movement inside the school. Levelling and re-surfacing of the playground has not yet been done and is a necessary recommendation.

At **Rufford (Holmeswood) Methodist School,** re-surfacing of the boys' playground should be put in hand without delay.

At **Scarisbrick St. Mark's C.E. School** the central heating foreshadowed in last year's report has been carried out. General repairs to windows, doors, roof and drainage have been done and a long felt want filled.

At **St. Mary's R.C. School** electric light has been fitted, a cycle shed built, and repairs effected.

Sefton Council School now has electric light throughout. Central heating has been installed. Ventilation has been improved by the provision of skylights. Water-closets have been substituted for earth-closets. Reconditioning of the playground during 1938 is hoped for.

The "Offices" at **Tarleton C.E. School** are now connected to the main sewer. Water closets have been fitted and the old pails scrapped. Internal decoration has been carried out. Dual locker-desks with chairs have been provided in the Infants' room.

At **Tarleton Mere Brow C.E. School** the policy of progressive improvement continues. The gable end of the Infants' room has been pointed and new downspouts and gulleys fitted. A new boundary wall is being erected. It is hoped to complete the scheme of reconstruction of the Offices and the change-over to the water-carriage system during 1938.

THE CENTRAL SCHOOL SYSTEM.

Since the last report there has been no increase in the number of "Central Schools" equipped by the County Authorities for the purpose of giving advanced instruction in Practical and Special Subjects. The Tarleton Council, Halsall C.E. and Maghull C.E. Schools accommodate children of 11 years and over who have received their Primary education in the Junior sections of those and neighbouring schools. The cost of conveyance of senior children to the schools has been defrayed by the County Education Authorities and in some cases also, very satisfactory facilities are provided for mid-day meals to be taken on the School premises.

Arrangements are still in operation whereby children resident between Altcar and Maghull (who used to attend the Altcar C. E. School, which was demolished) are conveyed by 'bus to the Formby St. Luke's School, and children resident in Aintree Village and Netherton Areas are conveyed to the Litherland Beech Road and Central Council Schools.

New Senior Council Schools are at present in course of erection in Formby and Maghull, and it is anticipated that when these are completed the school accommodation problem in Maghull and in the Western portion of the Rural District will be less acute.

Owing to rapid building developments, the County Education Authorities have given approval for the purchase of sites for new Junior Council Schools in Netherton and Aintree, and it is anticipated that the erection of the schools will be proceeded with very shortly.

SCHOOL CLINICS.

A Minor Ailments and Child Welfare Clinic was opened by the County Council in November, 1935.

While the new Clinic is of great value for residents in the residential areas of Maghull and Lydiate, it is still necessary for children residing in the extreme south of the district to attend the Clinic at Litherland.

Those living in the north of the district attend the Longton Clinic (eyes only), those in the centre at Ormskirk, and Bickerstaffe children go to Skelmersdale.

Proposed New Clinic, Banks.—The County Council have purchased a large and fairly modern farmhouse in Gravel Lane, Banks. This is being adapted for use as a Child Welfare Centre and Clinic for minor ailments, dental defects and ophthalmology.

The area concerned will include the townships of Hesketh Bank, Tarleton and North Meols. The Clinic will be opened in the early part of 1938.

Litherland Clinic, Linacre Road.

Monday ...	10-12 a.m.	Dental.
	2- 4 p.m.	,,
Tuesday ...	10-12 a.m.	Minor Ailments.
	2- 4 p.m.	Dental.
	2- 4 p.m.	Maternity and Child Welfare Dr. Barker and two nurses.
Wednessday...	10-12 a.m.	Dental.
	2- 4 p.m.	,,
Thursday ...	10-12 a.m.	Ophthalmic.
	10-12 a.m.	Orthopædic—Nurse every Thursday. Surgeon attends second Thursday of each month only.
	2- 3 p.m.	Alternate Thursdays, Antenatal Clinic. Dr. Malpas, of Liverpool, attends alternate sessions.
	2- 4 p.m.	Dental.
Friday ...	10-12 a.m.	Minor Ailments. Nurse only for dressings.

Maghull Clinic, Parish Institute.

Every Thursday at 2 p.m.	Dr. Barker attends once every four weeks. Merely a Child Welfare Clinic at present.

Ormskirk Clinic, General Hospital.

Monday ...	... a.m.	Minor Ailments. Medical Officer attends alternate weeks only. (Re-dressings by hospital staff each day).
Friday ...	a.m. & p.m.	Dental.

Ormskirk, Church House.

Monday ...	2-4 p.m.	Child Welfare Centre.
Tuesday ...	.. p.m.	Orthopædic. Nurse only, except second Tuesday in each month.
Friday ...	... a.m.	Orthopædic. First Friday in each month only. Surgeon attends.

The following is a list of schools in the district:—

District No.	SCHOOL	School No.	No. OF CHILDREN
7	Hesketh-with-Becconsall ...	28	28 infants, 52 mixed
7	North Meols, Banks Primitive Methodist	24	138 Mixed & infants
7	North Meols, St. Stephen's ...	25	57 mixed & 42 infants
7	Tarleton, Mere Brow C.E. ...	26	27 ,, 9 ,,
7	Tarleton C.E.	27	102 mixed & infants
	Tarleton Council		133 seniors, 60 juniors, 31 infants
16	Halsall Central School	30	225 mixed
16	Haskayne C.E.	31	22 mixed & 9 infants
16	Bickerstaffe C.E.	13	60 boys, 90 girls & inf'ts
16	Maghull Memorial C.E. .	16	408 sens. & juns., 104 inf'ts
16	Maghull St. George's R.C. ...	17	55 mixed & 24 infants
16	Melling (Aughton) R.C. ...	14	33 seniors & 23 ,,
16	Melling (Ormskirk) C.E. .	15	100 juniors & infants
16	Scarisbrick (St. Mark's) C.E..	32	24 juniors & 34 infants
16	Scarisbrick (St. Mary's) R.C..	33	90 mixed & 28 infants
16	Scarisbrick Township	34	17 juniors & 24 infants
16	Aughton Christ Church	20	95 mixed & 46 infants
16	Aughton Parochial	21	51 juniors & 26 infants
16	Lydiate R.C....	19	37 sens. & juns., & 35 inf'ts
16	Lydiate C.E....	18	73 mixed & infants
16	Rufford C.E....	22	52 mixed & 17 infants
16	Rufford Holmeswood Methodist	23	52 mixed & infants
16	Bispham Free Grammar ...	24	54 ,, ,,
28	Ince Blundell R.C.		48 ,, ,,
28	Netherton R.C.		50 mixed & 43 infants
28	Sefton Council		31 mixed & 24 infants

Table showing the sanitary conditions of each school in the West Lancashire Rural District:—

School	Washing Accommodation	Water Supply	Cloakroom	Closet Accommodation	Feet from School	Drainage
Hesketh Bank ...	2 fixed basins, taps over	Public Main	Separate	12 pail closets	5	Cesspool
Banks Primitive Meth.	11 ,, ,, ,,	,,	,,	9 pail closets	26	,,
Banks St. Stephen's ...	6 ,, ,, ,,	,,	,,	11 water closets.	30	Septic tank
Tarleton Mere Brow ...	4 ,, ,, ,,	,,	,,	6 Privies	27	Cesspool
Tarleton C.E.	7 ,, ,, H.&.C. ,,	,,	,,	9 water closets.	58	Sewer
Tarleton Council ...	10 ,, ,, H.&C., ,, 1 bath, spray and shower	,,	,,	10 water closets	—	Septic tank
Halsall C.E.	12 ,, ,, with taps in three separate cloakrooms	,,	,,	15 pails on concrete channel	117	Cesspool
Downholland Haskayne	6 fixed basins, in passage	,,	In passage	6 seats over concrete service channel	6	,,
Bickerstaffe C.E. ...	6 ,, ,, outside lavatories	,,	Separate	18 pail closets	56	,,
Maghull Memorial C.E.	16 ,, ,, in cloakroom	,,	,,	17 W.C.'s	10	Sewer
Maghull St. George's ...	5 ,, ,, ,,	,,	,,	5 W.C.s'	40	,,
Melling R.C.	1 bowl under tap in classroom	,,	Separate, very small	8 "Elsan" lavatories	20	–
Melling C.E.	5 fixed basins in cloakrooms	,,	Separate	6 pail closets	60	Cesspool
Scarisbrick St. Mary's ...	4 bowls in passage	,,	In passage	6 pails	60	,,
Scarisbrick Township ...	3 sinks in cloakroom	,,	3 small porches	6 privies	87	,,
Scarisbrick St. Mark's ...	5 bowls in cloakroom	,,	Separate	6 pails	69	,,
Aughton Christ Church	7 fixed bowls, taps over	,,	,,	7 W.C.'s	8	Sewer
Aughton Parochial ...	9 fixed basins in cloakrooms	,,	,,	8 W.C.'s	3	,,
Lydiate R.C.	1 fixed bowl, very inadequate	,,	,,	9 pail closets	36	Cesspool
Lydiate C.E.	2 fixed bowls in each of 3 cloakrooms.	,,	,,	Privies	68	,,
Rufford C.E.	2 ,, bowls in cloakroom	,,	,,	7 W.C.'s	8	Sewer
Holmeswood Meth. ...	2 bowls in each of 3 cloakrooms	,,	,,	5 privies	15	Cesspool
Bispham Free Grammar	2 ,, ,, ,,	,,	,,	8 W.C.'s, built 1927	69	Septic tank
Ince Blundell ...	1 handbowl in each section, in porch	,,	Small, in porch	3 seats in each section, over large, open ash-pit, liable to flood	9	Road drain, except urinal which is to cesspool in field.
Netherton R.C.	2 fixed bowls in each cloakroom	,,	2 separate.	5 seats in each section over common ashpit, 1 W.C.	15	Sewer.
Sefton Council	3 wash bowls in each section, made of iron and unsatisfactory	,,	In porch, with wash-basins: inadequate	3 W.C.s'	90	Partly to pit well away from school and partly to cesspool in a ditch good distance from school.

PROVISION OF MILK TO SCHOOLS.

Arrangements have been made by the County Council for the provision of milk to elementary schools in the County Education Area.

Samples of the milk delivered to each school are obtained for pathological examination at least twice a year. The samples are taken and forwarded to the laboratory by the Inspectors of the Rural Council.

The Milk Marketing Board accept no milk for rebate unless the source and quality of the supply have been approved, in the case of schools under the control of a County Council, by the County Medical Officer of Health after consultation with the Medical Officer of Health of the local Sanitary Authority in which the school is situated.

Prior to the end of the year 52 samples had been taken at the request of the County School Medical Department.

The main scheme is organised by teachers on a voluntary basis.

The "Milk in Schools Scheme" has extended in popularity and usefulness. Necessitous cases are referred to the County Education Department for consideration, and free milk granted in their discretion. Head Teachers report improvements both in mental alertness and also in physique. Some children travel long distances to school and are unable to carry liquids in a lunch basket: without the scheme these would get no fluid refreshment, other than water, from 7-30 a.m. to 5-30 p.m. These children enjoy particularly the bottle they receive on arrival at school, before lessons commence.

At Maghull C.E. and Tarleton Council schools, two schemes of milk supply are available: ordinary $\frac{1}{3}$-pint bottles, and also malted milk. The children thus have a choice of either cold or hot drinks. The Head Teacher at St. Mary's R.C. School, Scarisbrick, reports that children taking milk are rarely absent from school. Ninety per cent. of the children attending Tarleton C.E. School take milk: the Headmaster reports "They seem to have a superabundance of energy."

The Tarleton Council School Headmaster states that when Whooping Cough was prevalent, *all* the children remaining at school took milk. Malted milk only is available at Mere Brow School. Fifty-five per cent. of the children take it.

OBSERVATIONS ON THE HEALTH OF SCHOOL CHILDREN.

Influenza, colds, etc., were particularly prevalent during January, schools in the Northern area being particularly affected. Teachers co-operated by carrying out daily courses of gargling for all children. Unfortunately, so many children became infected that it was necessary to resort to school closure in Tarleton, Rufford and Scarisbrick.

Measles assumed epidemic proportions all over the district during late summer and autumn. School closure was employed more freely during 1937 than for many years.

At the close of the year, Chickenpox and Whooping Cough effected a lowering of attendances, notably in Aughton, Maghull and Halsall. Four schools were closed by order of the Assistant County Medical Officer of Health, the remainder by the District Medical Officer of Health.

Lydiate R.C. and Maghull C.E. Schools have had an unsatisfactory year from the health point of view. Both have been the victims of minor infectious diseases. Lydiate have had in addition several cases of epidemic jaundice and a few cases of scarlet fever, and Maghull impetigo and severe colds.

On the whole, the general standard of physique of school children shows improvement.

SCHOOL CLOSURE.

SCHOOL.	PERIOD.		REASON.
	from	to	
Tarleton Council	Jan. 25	Jan. 29	Influenza
Tarleton C.E.	,,	,,	,,
Tarleton Mere Brow	,,	Feb. 1	,,
S'brick St. Mark's C.E	,,	,,	,, colds, etc.
Rufford Holmeswood Methodist	Feb. 1	,, 10	,,
Rufford C.E.	,,	,,	,, & chickenpox
Tarleton Cl. Junior 1.	July 7	July 23	Measles
Tarleton C. E	Aug. 23	Sept. 6	,,
Tarleton Council	,,	,,	,,
Hesketh Bank C E.	31	,, 13	,,
Maghull R.C.	Nov. 30	Dec. 15	,,
Maghull C.E. Infants	,, 22	,, 22	Chickenpox and Whooping Cough

Requests are frequently received from Head Teachers for the school to be closed owing to a marked fall in attendances owing to infectious disease.

Usually school closure is inadvisable. When the school is closed, the children mix together freely (infected and non-infected) in their homes or at play, and possibly do not live under such hygienic surroundings as at school. The result is a further spread of the disease.

Where by reason of infectious disease the school attendance falls below 60 per cent. of the number of children on the register, the School Medical Officer is empowered, under the Education Act, 1921, to give a certificate to avoid loss of grant.

RATS AND MICE (DESTRUCTION) ACT, 1919.

Rat Week was held, as usual, during 1937, and rat poison of various kinds was issued by the Department to approved applicants during Rat Week and at other times.

The most favoured and most efficient poison appears to be red squill, which is issued in the form of rat biscuits. Satisfactory reports from several farmers have been received.

It is unfortunate, however, that in many cases occupiers take no action until the rats have obtained a firm hold on the building. The public do not sufficiently realise that under the Act it is their duty to keep down their own rats, nor do they apply sufficiently early to the Health Department whose duty it is to advise on the measures to be taken.

The value of rat-proofing is not sufficiently appreciated. Further, in many parts of the country the unfortunate habit has for many years been maintained of throwing out kitchen refuse, etc., into the back gardens and far too near to the house.

In these cases, of course, it is the tenants themselves who are largely responsible for the trouble which comes.

In the urbanised parts of the district dustbins should be renewed as soon as they become dilapidated, and those with ill-fitting lids should no longer be kept in use.

It is futile to spend time and money in trapping and in the provision of rat poison if these preventive measures are ignored. It would be well if tenants realising their responsibilities were to co-operate with one another more fully in this regard.

CEMETERIES.

There is one large cemetery in the district, and one projected. Apart from these, burials take place in the various church yards.

Section D.

HOUSING.

HOUSING.

General.

The general condition of houses in the Rural District is good, but as time progresses several of the older properties, particularly those situated in the Northern portion of the Rural District, become " worn out " and incapable of being repaired at a reasonable cost. In all such cases official representations are made to secure the demolition of such houses and the displaced tenants are re-housed, as far as practicable, in existing Council houses. In most of the older type houses dampness prevails in the walls, rising damp due to the absence of damp proof courses or penetrating damp due to the porosity and weathering of the brickwork used in their construction. Where dampness is found in houses, temporary measures are taken to abate this by the rendering of external or internal walls with damp resisting materials, but the question of providing a damp course to these old houses is not, in most instances, insisted on because of the excessive cost entailed and the fact that any disturbance of the walls might result in endangering the main structure of the house.

Dilapidations are infrequent and extensive repairs are seldom necessary. Most property owners are willing to co-operate with the department by securing the repair of their property and the prolongation of its life, and seldom is statutory action necessary to secure the repair of houses. In no instances has it been necessary for the Local Authority to carry out repairs of property in default of owners' non-compliance with notices.

During 1937 approximately 70 houses were found to be unfit for human habitation and not repairable at a reasonable cost. These properties compose two small communities in Hesketh Bank and Tarleton and several scattered properties in the other Parishes in the district, and at the end of the year the Council had under consideration the question of taking steps to secure the demolition of these houses and to rehouse the displaced persons. Most of the families occupying this insanitary property are agricultural workers or people of a similar wage earning status and the question of rehousing these families in houses of sufficient size and at an appropriate rental presents a serious problem.

In the Southern portion of the district the erection of new properties by Private Enterprise continues unabated, development being carried on in the Parishes of Aintree, Netherton, Thornton and Maghull. Houses are largely occupied by ex-residents of the City of Liverpool, County Borough of Bootle and Borough of Crosby and Urban District of Litherland.

No property owners have, as yet, availed themselves of the provision of the Housing (Rural Workers) Acts regarding monetary assistance in securing the re-conditioning of Agricultural properties (i.e., cottages occupied by agricultural workers or workers of similar financial standing) but there is every indication that during 1938 several owners will render Rural houses fit for human habitation under this Act.

During the year the number of cases of overcrowding has diminished, either by the families obtaining larger houses suitable to their needs, leaving the district or being transferred to existing Council houses as such become vacant. There now remain only 36 known cases of overcrowding in the District. The Council have under consideration the provision of additional houses to re-house these families.

Number of houses demolished (voluntarily)	17
Number of houses completed during 1937:—	
(*a*) By Local Authority	Nil
(*b*) By Private Enterprise	587
Number of houses in course of erection at end of 1937:—	
(*a*) By Local Authority	Nil
(*b*) By Private Enterprise	382
Total number of dwelling-houses in Rural District at 31st December, 1937	9663

1. Inspection of Dwelling-Houses During the Year:—

(1) (*a*) Total number of dwelling-houses inspected for housing defects (under Public Health and Housing Acts) ...	226
(*b*) Number of inspections made for the purpose	801
(2) (*a*) Total number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	151
(*b*) Number of inspections made for the purpose	301
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	70
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects fit for human habitation	83

2. Remedy of Defects During the Year without Service of Formal Notices:—

Number of dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers ...	91

3. Action under Statutory Powers during the Year:—

A. Proceedings under sections 9, 10, and 16 of the Housing Act, 1936:—

(1) Number of dwelling-houses in respect of which notices were served requiring repairs	19
(2) Number of dwelling-houses which were rendered fit after service of formal notices:—	
(*a*) By owners	23
(*b*) By Local Authority in default of owners	Nil

B. Proceedings under Public Health Acts:—

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied... ... 65

(2) Number of dwelling-houses in which defects were remedied after service of formal notices:—

(*a*) By owners 5

(*b*) By Local Authority in default of owners ... ... Nil

C. Proceedings under sections 11 and 13 of the Housing Act, 1930:—

(1) Number of dwelling--houses in respect of which demolition orders were made 7

(2) Number of dwelling-houses demolished in pursuance of Demolition Orders 8

D. Proceedings under section 20 of the Housing Act, 1930:—

(1) Number of separate tenements or underground rooms in respect of which Closing Orders were made. ... 1

(2) Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit ... ... Nil

OVERCROWDING.

PARISH	Statement of Overcrowding prevailing at end of 1936			Number of Cases of Overcrowding Relieved during year				Number of New Cases found during year			Position of Overcrowding at end of 1937			Inspections
	No. of houses over-crowded	No. of families dwelling therein	No. of persons dwelling therein	By transfers to Council Houses	By families decreasing in size	By families leaving district	By families obtaining larger houses	No. of new cases of over-crowding	No. of persons therein	No. of new cases abated	No. of houses over-crowded	No. of Council Houses over-crowded	Total	No. of houses measured for "Permitted Numbers"
Aintree	1	2	6½	1	—	—	—	—	—	—	—	—	—	4
Altcar	3	3	20½	—	—	—	1	—	—	—	2	—	2	55
Aughton	4	4	28½	—	2	—	—	—	—	—	1	1	2	43
Bickerstaffe ...	2	2	13	—	—	—	—	—	—	—	2	—	2	74
Bispham	—	—	—	—	—	—	—	—	—	—	—	—	—	11
Downholland...	2	2	11	1	—	—	—	—	—	—	1	—	1	4
Ford	—	—	—	—	—	—	—	—	—	—	—	—	—	192
Halsall	6	6	31	—	—	—	1	1	4	—	4	—	4	43
Hesketh Bank .	7	7	52	—	—	—	1	—	—	—	5	1	6	66
Ince Blundell...	1	1	7	1	—	—	—	1	3	1	—	1	1	10
Lydiate	3	4	20	1	2	1	1	2	8½	2	—	—	—	134
Maghull	—	—	—	—	—	—	—	—	—	—	—	—	—	508
Melling	8	9	55	2	2	1	—	1	7½	1	1	2	3	39
Netherton ...	2	2	16	—	—	—	—	1	5	—	3	—	3	48
North Meols ..	6	6	39½	—	1	1	1	—	—	—	3	—	3	38
Rufford	—	—	—	—	—	—	—	—	—	—	—	—	—	24
Scarisbrick	8	9	48½	1	2	1	—	—	—	—	4	—	4	3
Sefton	4	4	29½	—	1	1	—	—	—	—	1	1	2	41
Simonswood ...	4	4	24	—	2	—	1	—	—	—	—	1	1	3
Tarleton	1	1	5½	—	1	—	—	—	—	—	—	—	—	135
Thornton.... ...	2	2	13½	—	—	—	—	—	—	—	—	2	2	74
Totals	64	68	420½	7	13	5	6	6	25	4	27	9	36	1549

HOUSING STATISTICS FOR 1937.

	Aintree	Altcar	Aughton	Bickerstaffe	Bispham	D'holland	Ford	Halsall	Hesketh Bank	Ince Bl'dell	Lydiate	Maghull	Melling	Netherton	North Meols	Rufford	Scarisbrick	Sefton	Simonswood	Tarleton	Thornton	Totals
1. Total number of dwelling houses inspected for housing defects (under Public Health or Housing Acts)	—	—	4	11	—	4	2	16	23	3	66	17	17	1	7	3	10	—	—	28	4	226
Number of inspections for the purpose	—	—	98	33	—	18	2	49	20	2	206	118	93	3	72	16	30	—	—	38	12	810
2. Number of dwelling houses (included under sub-head above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	—	—	3	2	—	2	—	15	30	3	30	16	11	1	3	1	6	—	—	24	4	151
Number of inspections made for the purpose ...	—	—	5	4	—	4	—	28	66	7	60	31	20	1	7	2	12	—	—	46	8	301
3. Number of dwelling houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	—	—	—	1	—	—	—	5	27	3	—	9	—	—	1	—	2	—	—	22	—	70
4. Number of dwelling houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	—	—	3	10	—	2	—	10	1	—	26	5	12	1	2	1	4	—	—	2	4	83
5. Number of defective dwellings rendered fit in consequence of informal action by the Local Authority or their Officers	—	—	4	10	—	2	—	7	1	—	37	6	10	—	8	—	4	—	—	2	—	91
A. Proceedings under Sections 9, 10 and 16 of the Housing Act, 1936.																						
1. Number of dwelling houses in respect of which notices were served requiring repairs	—	—	13	—	—	—	—	—	1	—	—	—	3	1	—	1	—	—	—	—	—	19
2. Number of houses which were rendered fit after service of formal notices :—																						
(a) By Owners	—	—	12	—	—	—	—	—	1	—	7	—	3	—	—	—	—	—	—	—	—	23
(b) By Local Authority in default of owners	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

	Aintree	Altcar	Aughton	Bickerstaffe	Bispham	D'holland	Ford	Halsall	HeskethBank	Ince Bl'dell	Lydiate	Maghull	Melling	Netherton	North Meols	Rufford	Scarisbrick	Sefton	Simonswood	Tarleton	Thornton	Totals
B. Proceedings under Public Health Acts.																						
1. Number of dwelling houses in respect of which notices were served requiring defects to be remedied	—	—	1	—	—	2	—	2	3	—	36	2	6	—	5	2	4	—	—	4	—	67
2. Number of dwelling houses in which defects were remedied after service of formal notice :—																						
(a) By Owners	—	—	—	—	—	—	—	2	—	—	—	3	—	—	1	—	—	—	—	—	—	6
(b) By Local Authority in default of owners	—	—	—	—	—	—	—	2	—	—	—	2	—	—	1	—	—	—	—	—	—	5
C. Proceedings under Sections 11 and 13 of the Housing Act, 1936.																						
1. Number of dwelling houses in respect of which Demolition Orders were made	—	—	—	1	—	1	—	—	—	—	—	4	—	—	1	—	—	—	—	—	—	7
2. Number of dwelling houses demolished in pursuance of Demolition Orders	—	—	—	—	—	—	—	—	—	—	—	2	3	—	2	—	—	—	—	1	—	8
D. Proceedings under Section 20 of the Housing Act, 1930.																						
1. Number of separate tenements, or underground rooms in respect of which Closing Orders were made	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
2. Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Number of dwelling houses demolished without service of Demolition Orders	—	4	—	—	—	—	2	—	—	1	—	10	—	—	—	—	—	—	—	—	—	—

As an indication of the rapid building progress at present taking place in the Rural District, the sub-joined Table, which has been handed to me by the Surveyor, is printed here:—

BUILDINGS APPROVED BY THE WEST LANCASHIRE RURAL DISTRICT COUNCIL, 1936-7.

Township.	Houses.		Other Buildings.	
	1936	1937	1936	1937
Aintree	290	—	4	9
Altcar	7	51	1	—
Aughton	150	18	8	6
Bickerstaffe	12	1	2	3
Bispham	1	—	—	—
Downholland	2	—	1	—
Ford	—	438	—	1
Halsall	9	7	1	5
Hesketh-with-Becconsall ...	13	21	1	5
Ince Blundell	2	1	—	1
Lydiate	12	31	4	5
Maghull	697	210	29	56
Melling	8	16	5	9
Netherton	332	—	6	9
North Meols	19	4	7	12
Rufford	13	17	9	7
Scarisbrick	26	5	5	9
Sefton	2	—	3	2
Simonswood	2	—	—	3
Tarleton	38	19	5	5
Thornton	171	66	7	4
Totals ...	1806	905	98	151

Section E.

INSPECTION AND SUPERVISION OF FOOD.

DAIRIES, COWSHEDS AND PURVEYORS OF MILK.

The Milk and Dairies Order of 1926 made provisions for securing the cleanliness of dairies, etc., and for protecting milk against infection and contamination.

The expression " dairy " includes (inter alia) any farm or cowsheds.

The operation of the order has effected the modernisation of existing dairies and cowsheds, and the conversion of other buildings into dairies or cowsheds to conform with its provisions. Very few new buildings have been erected. The result is that West Lancashire is equipped with well-lighted and ventilated buildings which would satisfy all but the most stringent inspector.

Floors in dairies are generally well kept, but sufficient care is not invariably used by farmers in scraping dried excreta from cowshed floors and from milking stools.

Constant supervision is necessary, and great patience is required to teach some workers the rudimentary requirements of asepsis. The same hand which moves the dirty milking stool from cow to cow also handles the teat and this infects the milk; yet it is difficult to demonstrate adequately the close connection between a dirty stool and a high bacterial count.

The Order provides (Section 22) for the cleansing of the interior of cowsheds " from time to time," and for limewashing or other disinfection at least twice a year.

Limewashing is carried out, but in many cases only as a result of the Inspector's visit. Fifty-one requests for limewashing had to be made. The work was carried out in all cases.

Under Section 6 of the Order, cowkeepers, dairymen, and also their premises, must be registered.

TABLE 1.

Number of Registered Dairies at end of 1936.	New Applications for Registration.	Registration Refused	Dairies Removed from Register.	Number of Registered Dairies at end of 1937.
141	10	—	6	145

The total number of registrations is made up as follows:—114 cowkeepers, 14 retail purveyors resident in the district and 17 retail purveyors of milk non-resident.

TABLE 2.

Year	Designated Milk Producers					Samples Taken				Delivering Designated Milk Supplementary Licence	Registrations (Milk & Dairies (Consolidation) Act)			Total Number of Registrations
	Certified	Grade A. T.T.	Grade A.	Grade A Pasteurised	Pasteurised	Under sale of Food and Drugs Act.	By Local Authority	Inspections	Approximate number of Cows		Cowkeepers	Resident Purveyors	Non-Resident Purveyors	
1926	—	—	2	—	—	25	—	176	—	—	62	5	8	75
1927	—	—	2	—	—	22	—	174	—	—	64	6	7	77
1923	—	—	2	—	—	16	—	181	—	—	68	5	9	82
1929	—	—	1	—	—	28	—	215	—	—	72	6	9	87
1930	—	—	1	—	—	43	—	197	—	—	72	7	10	89
1931	—	—	1	—	—	42	—	219	830	—	72	7	11	90
1932	—	—	2	—	—	22	5	263	1070	1	90	13	14	117
1933	—	—	3	—	—	34	3	273	1158	2	93	14	12	119
1934	—	—	3	—	—	52	11	277	1266	2	106	16	13	135
1935	—	1	6	—	—	52	35	330	1400	2	113	14	16	143
	Accredited		Tuberculin Tested		Pasteurised									
1936	11		1		2	52	68	340	1400	2	110	15	16	141
1937	13		2		—	48	54	327	1400	2	114	14	17	145

Milk Sampling.—Fifty-four samples of milk were taken by the Inspectors during the year.

Fifty-two of these were samples of milk supplied to schools, taken at the request of the Lancashire County Council. The cost of the bacteriological examination was borne by the County Council.

The other two samples were taken from milk produced in Halsall and Ince Blundell and were examined for Brucella Abortus.

All the examinations were carried out by the Pathological Department of the Liverpool University.

Of 48 samples taken in the District under the Sale of Food and Drugs Act, 1893, one was adulterated. Proceedings were instituted and the vendor was convicted.

Tuberculosis.—As a result of notifications from Medical Officers of Health that tubercle bacilli had been discovered in milk produced in West Lancashire, eleven inspections of herds were made by County Veterinary Inspectors during the year. These inspections were as follows:—Tarleton and Melling, two each; Thornton, Aughton, Sefton, Halsall, Rufford, Hesketh Bank and Maghull, one each.

295 animals were inspected and three of them were slaughtered as being tuberculous. Officers of the Department assisted at each inspection.

SALE OF FOOD AND DRUGS ACT.

This Act is administered by the County Police.

For the purpose of the administration of the Act the West Lancashire Rural District comes partly within the Chorley Area and partly within the Seaforth Area.

The accompanying figures have been supplied by the Superintendents of Police at Seaforth and Chorley, respectively:—

PORTION OF DISTRICT WITHIN THE CHORLEY AREA.

Samples.	Purchases.
Milk	8
Pork Sausage	1
Brawn	1
Butter	1
Oatmeal	1
Tapioca	1

The County Analyst returned each of these samples as genuine.

PORTION OF DISTRICT WITHIN THE SEAFORTH AREA.

Samples.	Purchases.
Milk	40
Sugar	3
Butter	2
Cheese	2
Lard	1
Tea	2
Coffee	2
Jam	3
Pepper	3
Margarine	3
Oatmeal	1
Cocoa	1
Chocolates	1
Ground Rice	1
Total ...	65

One prosecution was instituted in respect of adulterated samples of milk obtained in the West Lancashire Rural District, the vendor being convicted.

BAKEHOUSES.

There are nine bakehouses in the district, distributed as follows:—Aughton 3, Bickerstaffe 1, Hesketh Bank 1, Maghull 1, North Meols 1, Scarisbrick 1, Tarleton 1.

Inspection in all cases proved satisfactory.

They are all retail bakehouses, i.e., the bread, etc., baked being sold by retail in the shop occupied with the bakehouse.

Only one is painted inside, the remainder are whitewashed regularly.

All have sanitary conveniences, generally in connection with the dwelling house, but in no case is there any direct communication between the sanitary convenience and the bakehouse.

Two bakehouses in Maghull were closed during the year.

OFFENSIVE TRADES.

By the West Lancashire (Offensive Trades) Confirmation Order, 1926, which came into operation on the 15th day of February, 1926, the Council adopted Byelaws with respect to Offensive Trades.

These are a slightly modified form of the model Byelaws issued by the Ministry of Health. They apply to all parishes save those of Simonswood and Bispham.

A soap works is situated in Park Lane, Netherton; this is a large works, and comes under the Factory Acts.

SLAUGHTERHOUSES.

There are eleven slaughterhouses in the district, five of which are licenced and seven are registered.

There are four slaughterhouses in Tarleton; two of these are in the village, one being connected to the main sewer in 1935, and the other early in 1937. The other two, one at Holmes, and the other at Carr Lane, are not connected, as the sewer is not available.

The interior walls of all are regularly limewashed but the roofs are not.

There are two slaughterhouses in Maghull, both having concrete floors drained to gullies outside. The walls are limewashed and the interiors clean. One of them was new in 1935 and replaced one which had been discontinued. It is only temporarily licensed but is well constructed of corrugated iron on a wooden framework erected on concrete foundations.

Unfortunately all the slaughterhouses in the Rural District are within 100 feet of a dwelling house, indeed most are almost attached thereto.

Public water supply is available in all cases and the sanitary condition is on the whole good.

Bye-laws for slaughterhouses are in force in the district.

During the year 565 inspections were made.

WORKSHOPS.

There are 134 workshops in the district. During the year eight new workshops were registered, one transferred and eight abolished.

298 inspections were made. Nineteen defects were found and 18 remedied.

1.—INSPECTIONS.

Including Inspections made by the Sanitary Inspectors.

Premises.	Inspections.	Notices.	Prosecutions.
Factories	44	—	—
Workshops	298	—	—
Workplaces	—	—	—
Home Premises	—	—	—
Totals	342	—	—

2.—DEFECTS.

Particulars of Nuisances under Public Health Acts.	No. of Defects. Found.	Abated.	Reported H.M. Inspector.	Prosecutions.
Want of cleanliness ...	19	18	—	—
Want of ventilation ...	—	—	—	—
Other nuisances... ...	—	—	—	—
Totals	19	18	—	—

REGISTERED WORKSHOPS.

Bakers and Confectioners	9
Basketmakers	10
Blacksmiths	25
Dressmakers	7
Joiners	11
Motor and Cycle Engineers	21
Saddlers	2
Shoemakers and Cloggers	22
Tailors	4
Tinsmiths	1
Wheelwrights	22
Total	134

MEAT INSPECTION.

Arrangements have been made whereby the proprietors of slaughterhouses send one notice specifying the days on which they would regularly slaughter, and the time at which they would do so. Outside the slaughterhouses, with very rare exceptions, it is only pigs that are slaughtered, and on each occasion notice should be sent to the inspectors, stating the day and time on which slaughter will take place.

1937	Cattle, excluding Cows	Cows	Calves	Sheep and Lambs	Pigs
Number Killed (approximately) ...	274	128	31	921	2948
Number Inspected	262	118	31	881	2877
All diseases except Tuberculosis :—					
Whole carcases condemned ...	—	—	—	3	41
Carcases of which some part or organ was condemned ...	20	4	—	· 4	307
Percentage of the number inspected affected with disease other than Tuberculosis ...	7·6	3·4	—	·7	12·0
Tuberculosis only :—					
Whole carcases condemned ...	—	1	—	—	22
Carcases of which some part or organ was condemned ...	6	26	—	—	95
Percentage of the number inspected affected with Tuberculosis	2·3	22·8	—	—	4·1

The number of carcases examined during the year was 3,885. The weight of Tuberculous meat condemned was 2 tons, 11 cwts. and 38 lbs., and other diseased meat 2 tons, 6 cwts. and 73 lbs.

The following table shows the work done during the year in connection with meat inspection.

ANTHRAX.

Under the Anthrax Order of 1928 on the occurrence of a suspected case of anthrax it is the duty of the Inspector to the County Council to notify the occupier that his premises is an infected place. The Veterinary Inspector to County Council then proceeds to the infected place to examine the infected animal, and take what action he deems necessary. Copies of the notice are sent by the Inspector to the Medical Officer of Health of the Local Authority, and this procedure was adopted in the case of four different premises during the year under review. Fortunately in each case the animal was found not to be suffering from anthrax.

Section F.

PREVALENCE OF, AND CONTROL OVER INFECTIOUS AND OTHER DISEASES.

INFECTIOUS DISEASE.

There has been an increase in the incidence of infectious disease during 1937. Four hundred and twenty-one cases were notified, including those notifiable and those non-notifiable. Of the total number, one hundred and seventy-one were notified under the Infectious Diseases Notification Act and Special Orders of that Act, and two hundred and fifty were non-notifiable.

The total figures for the past five years were:—1933, 191; 1934, 245; 1935,, 231; 1936, 370; 1937, 421.

The methods of investigating the spread of such cases of sickness in schools has been greatly improved during the past ten years, and this is a factor in the causation of the higher figures just shown. The increase in total notifications is due mainly to increased efficiency in notifying cases of infectious disease which are not compulsorily notifiable. Further, the total population is increasing year by year.

The school attendance officers render weekly returns of infectious sickness occurring in schools to this Department, and the head teachers have been particularly helpful in notifying us from time to time when cases are absent from their school, and when cases in the children's homes have come to their notice.

	Smallpox	Enteric Fever	Scarlet Fever	Measles	Diphtheria	Puerperal Fever and Pyrexia	Cerebro-spinal Fever	Poliomyelitis	Malaria	Encephalitis Lethargica	Whooping Cough	Erysipelas	Pneumonia
Cases	—	5	50	115	33	1	—	—	—	1	76	12	27
Case Rate per 1000 ...	—	0·15	1·55	3·55	1·02	0·03	—	—	—	0·03	2·34	0·37	0.83
Deaths	—	—	—	—	1	1	—	—	—	2	1	—	18
Death Rate per 1000 ...	—	—	—	—	0·03	0·03	—	—	—	0·06	0·03	—	0.56
Percentage of deaths to cases ...	—	—	—	—	3·03	100	—	—	—	200	1·32	—	66.66

NOTIFIABLE DISEASES DURING THE YEAR.

NOTIFIABLE DISEASES	Total cases at all ages	TOTAL CASES NOTIFIED — Years. Under 1 year	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65	65 and over	Total Deaths	HOSPITAL — Total cases removed to Hospital	Deaths in Hospital of persons belonging to the District
Smallpox	—	—	–	–	–	–	—	—	—	—	–	–	—	—	—	—
Scarlet Fever	50	—	1	2	3	4	14	10	9	3	3	1	—	—	42	—
Diphtheria	33	—	–	1	4	1	9	8	3	4	3	–	—	1	32	1
Enteric Fever	5	—	–	–	–	–	1	1	—	3	–	–	—	—	5	—
Pneumonia	27	2	1		–	1	1	3	1	4	2	5	7	18	—	—
Puerperal Fever and Pyrexia	1	—	–	–	–	–	—	—	—	1	–	–	—	1	—	—
Acute Poliomyelitis ...	—	—	–	–	–	–	—	—	—	—	–	–	—	—	—	—
Encephalitis Lethargica...	1	—	–	–	–	–	—	—	—	1	–	–	—	1	1	1
Erysipelas	12	—	–	–	–	–	—	—	—	3	3	4	2	—	2	—
Ophthalmia Neonatorum .	—	—	–	–	–	–	—	—	—	—	–	–	—	—	—	—
Pulmonary Tuberculosis ..	29	—	–	–	–	–	—	—	4	18	2	5	—	13	17	—
Other Tuberculous Diseases	10	—	–	1	1	1	1	1	—	5	–	–	—	1	1	—
Totals	168	2	2	4	8	7	26	23	17	42	13	15	9	35	100	2

The following table shows the number, monthly distribution, and nature of cases of infectious disease coming under the notice of the Medical Officer of Health during the year 1937:—

	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS	Removed to Hospital
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	3	1	3	4	3	4	5	1	8	6	7	5	50	42
Diphtheria	1	...	3	...	2	2	1	13	2	1	3	5	33	32
Enteric Fever	2	...	...	...	...	...	1	...	2	...	...	...	5	5
Puerperal Fever and Pyrexia	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Erysipelas	...	...	...	...	...	...	...	1	1	2	4	4	12	2
Cerebro-Spinal Fever	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Poliomyelitis	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Pneumonia and Influenzal Pneumonia ..	2	10	2	4	1	1	...	...	1	1	1	4	27	...
Measles	...	...	1	...	3	11	8	4	5	1	25	57	115	1
Malaria	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough...	5	8	..	...	...	...	...	3	24	22	13	1	76	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	1	1	1
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chickenpox	8	...	...	...	...	4	9	1	5	16	13	6	62	...
Ophthalmia Neonatorum	...	...	...	...	...	...	...	...	...	...	...	...	...	...
MONTHLY TOTALS...	21	20	9	8	9	22	24	23	48	49	66	83	382	83

Table showing the number of houses in each Township and in the whole of the district known to be infected during the year, and the number of cases and deaths.

1937	Pneumonia			Scarlet Fever			Diphtheria			Enteric Fever			Whooping Cough			Erysipelas			Puerperal Fever and Pyrexia			Diarrhea			Measles			Tuberculosis			TOTALS		
TOWNSHIP	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D	H	C	D
Aintree	...	...	...	5	5	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	11	11	...
Altcar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	2	2	2	2
Aughton	3	3	5	5	9	...	...	...	...	...	...	...	5	6	...	2	2	...	...	...	...	...	...	...	1	1	...	3	3	2	19	24	7
Bickerstaffe	...	...	1	1	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	3	2
Bispham	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Downholland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	1
Ford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	2	2	...
Halsall	2	2	...	...	...	...	...	...	...	1	1	...	2	2	...	1	1	...	...	...	...	...	...	...	14	17	...	2	2	...	22	25	...
Hesketh Bank ...	3	3	1	...	...	...	1	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	8	1
Ince Blundell ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...
Lydiate	1	1	1	7	12	...	1	1	...	2	2	...	5	6	...	...	...	...	...	...	...	...	...	...	3	3	...	3	3	2	22	28	3
Maghull	5	5	3	6	7	...	1	1	...	1	1	...	26	31	...	2	2	...	...	...	...	...	...	...	18	21	...	12	12	4	71	80	7
Melling	3	3	1	4	4	...	1	1	...	...	...	...	20	23	...	...	...	...	...	...	...	...	...	...	7	9	...	4	4	1	39	44	2
Netherton	1	1	3	4	4	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	3	4	...	2	2	...	12	13	3
North Meols	1	2	1	1	1	...	2	7	1	...	...	...	...	...	...	2	2	...	...	...	...	...	...	1	8	8	...	1	1	...	15	21	3
Rufford	...	...	...	1	1	...	...	...	...	...	...	...	7	8	...	...	...	...	...	...	...	...	...	...	28	35	...	...	...	...	36	44	...
Scarisbrick	4	4	2	4	4	...	1	5	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	8	10	...	3	3	...	22	28	2
Sefton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Simonswood	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	1
Tarleton	1	1	...	...	...	...	3	8	...	...	...	...	...	...	1	2	2	...	1	1	...	...	...	...	5	5	...	1	1	2	13	18	3
Thornton	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	3	3	...
W. L. R. D.	26	27	18	39	50	...	15	33	1	5	5		63	76	1	12	12	...	1	1	...	...	...	2	97	115	...	39	39	14	299	358	36

SCARLET FEVER.

During 1937 this disease retained its mild character and did not become epidemic in any part of the area.

Fifty cases were notified and 42 of these were admitted to hospital. Complications were infrequent.

The following table shows the incidence and mortality from scarlet fever during the past ten years :—

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Cases	61	104	82	35	25	35	70	21	79	50
Deaths	—	—	—	—	1	1	—	—	1	—
Case Rate per 1000 inhabitants ...	2·6	4·5	3·5	1·6	0·98	1·31	2·57	0·73	2·58	1·55
Death Rate per 1000 inhabitants ...	—	—	—	—	0·44	0·44	—	—	0·03	—
Fatality Rate per 100 cases ...	—	—	—	—	4	2·8	—	—	1·2	—

SCARLET FEVER.

Deaths and death rates per 1,000 of the population from 1890 to 1937:—

Table 2.

Year	Deaths	Rates per 1000	Average for 10 years	Year	Deaths	Rates per 1000	Average for 10 years
1890	5	0·16	0·18	1914	1	0 04	—
1891	7	0·25	—	1915	1	0·04	—
1892	4	0·14	—	1916	—	—	—
1893	9	0·38	—	1917	1	0·05	—
1894	11	0·41	—	1918	1	0 06	—
1895	4	0·14	—	1919	—	—	0·04
1896	4	0·11	—	1920	—	—	—
1897	7	0·25	—	1921	1	0·05	—
1898	1	0·04	—	1922	—	—	—
1899	—	—	0·18	1923	—	—	—
1900	3	0·1	—	1924	1	0·05	—
1901	1	0·05	—	1925	1	0·05	—
1902	4	0·19	—	1926	1	0·04	—
1903	—	—	—	1927	—	—	—
1904	2	0·07	—	1928	—	—	—
1905	1	0·04	—	1929	—	—	0·019
1906	3	0·14	—	1930	—	—	—
1907	4	0·19	—	1931	—	—	—
1908	3	0·14	—	1932	1	0·98	—
1909	—	—	—	1933	1	0·04	—
1910	—	—	0·09	1934	—	—	—
1911	1	0·04	—	1935	—	—	—
1912	2	0·09	—	1936	—	—	—
1913	2	0 09	—	1937	—	—	—

Table 3.

SCARLET FEVER.

Incidence for the decennial periods 1890—1937.

Period.	Case Rate per 1,000 of population.
1890—1899	4.9
1900—1909	3.7
1910—1919	3.2
1920—1929	2.5
1930—1935	1.78
1936	2.58
1937	1.55

DIPHTHERIA.

The incidence of this disease during 1937 was greater than in 1936, thirty-three cases having been notified as against five cases in the previous year. Fortunately the proportion of severe cases was low. Only three of the cases admitted to hospital were seriously ill; one of these died.

A small outbreak of eleven cases in Hesketh Bank and Tarleton produced a stimulus for immunisation in a part of the District where acceptances hitherto had been disappointing.

Several carriers were admitted to hospital. The segregation of these persons was instrumental in preventing the spread of the disease. Six cases who had been detained in hospital for prolonged periods were operated on for removal of tonsils and adenoids.

The difficulty experienced in the control of diphtheria is well illustrated by the undermentioned case:—

R.B., a boy of 10, was admitted to Hospital 26/8/37. Three consecutive swabbings from his throat and nose proving negative, he was discharged on 21st September.

M.B., his sister, was admitted to Hospital suffering from Diphtheria on 24th October. Swabs were taken from all the family, including R.B., on the 27th, and all were negative.

A further swab taken from R.B. on the 1st of November proved positive. R.B. was admitted to hospital for removal of tonsils and adenoids, and is now cured.

The prevalence of diphtheria in the large towns surrounding the area was undoubtedly responsible for several of the cases. The public are becoming more "hospital minded," difficulty in obtaining consent for a child's admission to hospital is now rare.

Table 1.

DIPHTHERIA IN THE WEST LANCASHIRE RURAL DISTRICT, 1923—1927.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Cases	6	6	3	9	11	36	65	24	25	21	25	13	22	5	33
Deaths	—	1	—	2	—	2	1	1	—	1	2	1	—	—	1
Death Rate per 1000 of the population ...	—	0·05	—	0 08	—	0·08	0·04	0·04	—	0·04	0·07	0·04	—	—	0·03
Case Rate per 1000 of the population ...	0·3	0·3	0·15	0·45	0·48	1·5	2·7	1·03	1·1	0·87	0·95	0·47	1·76	0·16	1·02
Fatality rate per 100 cases	—	16·7	—	22·2	—	5·5	1·5	4·1	—	4·8	8	7·6	—	—	3·03

DIPHTHERIA AND CROUP.

Deaths and death rates per 1,000 of the population from 1890 to 1937 :—

Table 2.

Year	Deaths	Rates per 1000	Average for 10 Years	Year	Deaths	Rates per 1000	Average for 10 Years
1890	19	0·61	—	1914	7	0·34	—
1891	6	0·21	—	1915	2	0 09	—
1892	2	0-06	—	1916	3	0·13	—
1893	5	0·17	—	1917	1	0·15	—
1894	4	0·15	—	1918	3	0·17	—
*1895	11	0·11	—	1919	4	0·21	0·19
1896	2	0·07	—	1920	8	0·4	—
1897	1	0·04	—	1921	—	—	—
1898	5	0·18	—	1922	1	0·4	—
1899	4	0·14	0·17	1923	—	—	—
1900	4	0·15	—	1924	1	0·04	—
1901	8	0·2	—	1925	—	—	—
1902	5	0 24	—	1926	2	0·09	—
1903	2	0·09	—	1927	—	—	—
1904	—	—	—	1928	2	0·08	—
1905	2	0 09	—	1929	1	0·04	0 01
1906	1	0·04	—	1930	1	0·04	—
1907	2	0·09	—	1231	—	—	—
1908	1	0·04	—	1932	1	0·04	—
1909	1	0 04	0·09	1933	2	0 07	—
1910	4	0·18	—	1934	1	0·04	—
1911	4	0·18	—	1935	—	—	—
1912	6	0·29	—	1936	—	—	—
1913	6	0·28	—	1937	1	0·03	—

*Antitoxin brought into use.

Table 3.

INCIDENCE OF DIPHTHERIA IN AGE GROUPS. 1910-1937.

Year.	Under 1	1-5	5-15	15-25	25-65	65 and over.	Total at all ages.
1910	—	8	18	3	2	—	31
1911	—	9	22	8	4	—	43
1912	—	5	12	3	4	—	24
1913	—	9	39	4	3	—	55
1914	2	11	62	7	6	—	88
1915	1	6	9	3	5	—	24

Figures for 1916-1920 are not available. Age groups have been arranged for 1921-1937, as under.

Year.	Under 1	1-2	2-3	3-4	4-5	5-10	10-15	15-20	20-35	35-45	45-65	65 & up	Total at all ages
1921	—	—	—	1	1	12	9	3	1	2	1	—	30
1922	—	—	1	—	—	1	1	—	1	—	—	—	5
1923	—	—	—	2	—	1	1	—	2	—	—	—	6
1924	—	—	—	1	—	1	2	—	1	—	—	—	5
1925	—	—	—	1	1	1	—	—	—	—	—	—	3
1926	—	1	—	—	2	4	2	—	—	—	—	—	9
1927	—	—	1	—	1	7	2	—	—	—	—	—	11
1928	1	1	—	—	2	18	7	3	3	1	—	—	36
1929	—	—	2	3	2	22	15	6	11	1	2	1	65
1930	—	1	2	—	2	6	5	4	3	1	—	—	24
1931	—	—	—	3	1	7	4	8	—	1	—	—	25
1932	—	1	—	—	—	5	6	2	5	1	—	1	21
1933	—	1	1	—	—	7	8	4	3	1	—	—	25
1934	—	1	2	—	1	2	2	2	3	—	—	—	13
1935	—	—	—	—	1	4	8	3	4	2	—	—	22
1936	—	—	1	1	—	1	—	1	1	—	—	—	5
1937	—	—	1	4	1	9	8	3	4	3	—	—	33
Totals	1	6	11	16	15	108	80	39	42	13	3	2	338

From the foregoing tables it will be seen that while the fatality rate has frequently been high, the case incidence over the years has been low throughout. It is therefore logical to assume that the state of natural immunity of the child population is poor: with a rapidly increasing population this is a matter of serious importance, and the need for a whole-hearted response to the offer of artificial immunisation is proportionally greater.

The ideal antigen is one which will produce immunity in 100 per cent. of cases, with total absence of reactions.

IMMUNISATION AGAINST DIPHTHERIA.

Diphtheria is essentially a disease of children under the age of fifteen years. The percentage of immunity to diphtheria in children on attaining puberty is almost equal to that of adults.

About 60,000 cases are notified annually in England and Wales, and the average annual number of deaths is approximately 3,000. It is generally recognised that whenever possible diphtheria patients should be removed to hospital and the average period of hospital treatment is about five weeks. The interference with school life is, therefore, considerable and the cost of treatment a heavy charge on the ratepayers.

It is, therefore, desirable that attention should be paid to the advantages of diphtheria immunisation, and where practicable to offer to the parents or guardians of children of over one year of age the necessary facilities for protection.

Every effort is made to bring to the knowledge of parents the advantages of preventive treatment, and the fact that such treatment is offered free.

Each school is visited at least once a year, after a preliminary publicity campaign in which descriptive literature is sent to all parents. They are invited to visit the school, watch the treatment being given, ask questions and (most important of all) to bring for treatment their children who are under school age.

Able assistance in the dissemination of propaganda has been given by Ministers of Religion, General Medical Practitioners, Sanitary Officers, School Attendance Officers, Health Visitors and District Nurses.

After five years' work it is now safe to say that protective treatment is known and discussed by the public in all parts of the Rural District; prejudices are being broken down, and a good response at each visit is to be expected.

WEST LANCASHIRE RURAL DISTRICT COUNCIL

PERCENTAGE OF CHILDREN IMMUNISED AT:

31st DECEMBER 1974 (Black line)

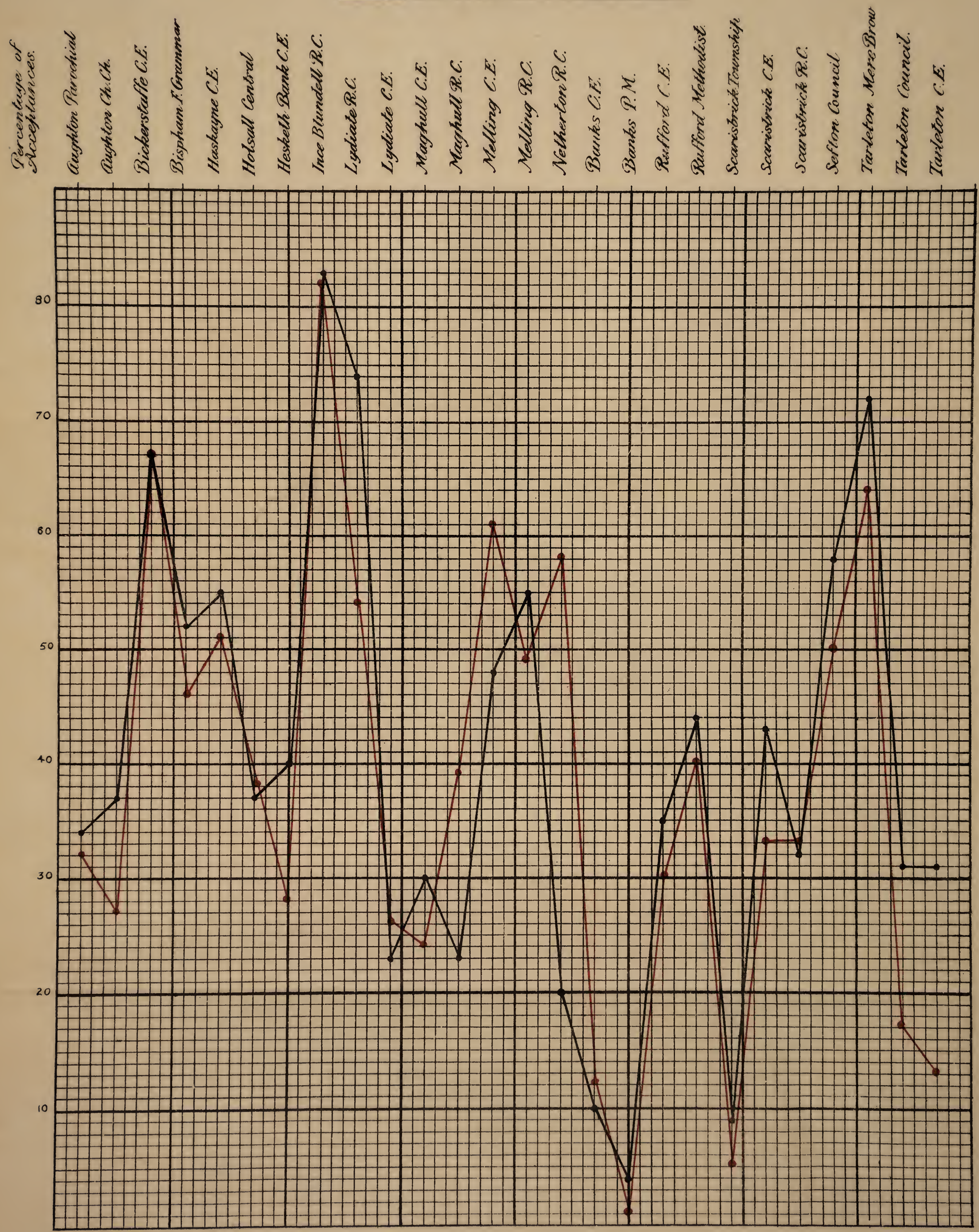
31st DECEMBER 1975 (Red line)

West Lancashire Rural District Council.

Percentage of Children Immunised at:

31st December, 1936. (Red Line.)

31st December, 1937. (Black Line.)



The children who receive treatment fall into four categories:—

1. Those attending school.
2. Those attending child welfare centres, recommended by the Assistant County Medical Officer in charge.
3. Infants brought to school or to the Council Offices for treatment.
4. Children in hospital convalescent from infectious diseases other than diphtheria, and who are susceptible thereto.

Routine treatment consists of three injections of 1 c.c. of Diphtheria Prophylactic T.A.F. given at fortnightly intervals. This is considered to be the ideal product for general use, as it is the least productive of sore arms or constitutional disturbance. For a child to be upset to the slightest degree after T.A.F. is exceptional.

In all hospital cases, and in the case of some younger school children, Alum Precipitated Toxoid (A.P.T.) is used. The "two-shot" method is preferred: a first dose of 0.1 c.c. is followed in 2½ weeks by a final dose of 0.4 c.c.

A.P.T. has a tendency to produce local reactions, but if this should happen after so small a dose as 0.1 c.c. (the "detector" dose), recourse is had to T.A.F. to complete the treatment. The use of A.P.T. effects a considerable saving of time for both patient and operator, in a large area such as ours.

Scarlet Fever prophylaxis is also given free on the request of the parent. Four doses are advocated. These are graduated from a first injection of 1250 skin test doses to a fourth of 25,000, and the first three are given concurrently with the anti-diphtheria injections.

The Schick test is a simple skin test by which susceptibility to diphtheria is demonstrated: a child with a negative Schick test generally speaking cannot contract diphtheria. In this District, it is the practice to assume that all young children are susceptible to diphtheria, and so to dispense with "anterior" Schick Testing; but "posterior" Schick testing (Three months or more after the last injection) is carried out as routine. All children found Schick negative after treatment are given certificates to that effect.

It is pleasant to be able to report that since the commencement of the scheme in 1932, no child immunised in the Rural District has contracted diphtheria.

"The younger the child, the more susceptible he is" is the general rule in diphtheria. Table 3 (overleaf), however, is informative as it shows that during the last forty years the highest incidence in this Rural District was upon school children. Two-thirds of the deaths during the same period were in the 5-15 age-group. Unfortunately the less enlightened of the population refuse to permit their children to be immunised unless they know that cases of diphtheria are actually present in their midst. The difficulty is to produce propaganda

sufficiently strong to persuade such people to " be wise in time " by having the injection done when the disease is not prevalent. At the close of a recent outbreak, one mother wrote, " I think the injection seems to upset him for a day or two, so do you think it is necessary now, as everything seems quiet? " With the apparent passing of the danger, the zeal for protection was gone.

Here again the period of school life would appear to be the period of greatest danger.

" Carriers " are healthy persons, who although they have not contracted the disease, harbour the bacilli in their throats and are able to disseminate the disease to others.

It has been shown by some workers that while protecting the children who have been injected, the tendency of an immunisation scheme is to increase rather than to diminish the number of carriers. Hence, though the scheme may protect the school children it may yet increase the danger to unprotected children of below school age. A rapid fall in the incidence of diphtheria can only be looked for when both groups of children have been protected. The proportion of immunised children must be maintained at over thirty per cent.

Since the inception of the scheme no case of diphtheria has occurred in a child who has received three injections and passed the final skin test.

In the few children who have contracted scarlet fever after having been immunised, the disease was so attenuated that the rash was barely discernible and the children not ill at all.

Parents are encouraged to attend at the school if they so desire, and it is gratifying to note the steady increase in the number of parents who do attend, and the interest taken in the scheme by the public generally.

The many institutions in the district which receive children into their homes would do well to require a diphtheria immunisation certificate from each child.

Experience has proved that the treatment is rather popular than otherwise. There is a definite advantage in holding the clinic in a large schoolroom; with many children present the children are confident, cheerful and take an interest in what is going on. On the other hand, one session in a small room of sufficient size to accommodate three only at a time proved a failure.

The attached table demonstrates the work done from the inception of the scheme in November, 1932 to the end of 1937.

It will be noticed from a perusal of the table that practically 100 per cent. of the children Schick tested were proved to be insusceptible to diphtheria three months after their final injection. The figure is particularly gratifying and clearly proves the efficiency of diphtheria prophylaxis.

DIPHTHERIA.

Number of persons, in age groups, completely immunised or found to be Schick negative :—

	1933*	1934	1935	1936	1937	
Under 1 year	—	—	3	2	3	
1 year	—	2	5	10	15	
2 years	—	4	1	10	21	Total under 5 years at end of 1937. **135**
3 ,,	6	4	13	10	15	
4 ,,	10	12	8	5	38	
5 ,,	63	81	37	66	87	
6 ,,	78	40	17	50	57	
7 ,,	67	41	19	35	43	Total 5-9 years at end of 1937. **754**
8 ,,	76	27	19	31	36	
9 ,,	80	30	13	14	30	
10 ,,	59	27	18	21	15	
11 ,,	75	19	19	14	22	
12 ,,	58	23	8	18	16	Total 10-14 years at end of 1937. **717**
13 ,,	44	28	10	9	5	
14 ,,	8	3	2	4	2	
15 years and over	1	—	—	5	1	Total over 15 years at end of 1937. **262**
TOTAL	625	341	192	304	406	**1868**

*Nov. 1932—Dec. 1933.

PARTICULARS OF WORK DONE IN CONNECTION WITH IMMUNISATION AGAINST SCARLET FEVER AND DIPHTHERIA SINCE THE COMMENCEMENT OF THE SCHEME IN NOVEMBER, 1932, TO 31st DECEMBER, 1937.

School	Year	No. of acceptances.	Total on Register.	Percentage of children actually in school 31/12/37 who have completed course	Immunised against diphtheria only.	Immunised against Scarlet Fever only.	Received complete Diphtheria course.	Received complete Scarlet Fever course.	Diphtheria course not completed.	Scarlet Fever course not completed.	Not Schick tested at 31/12/37.	Left for another School in district before testing.	Schick tested during 1932-36 and 1937.	Number Negative.	Absent when results were read.	Remarks
Aughton Parochial	1932-36	46	72		4	—	45	41	1	1	17	5	16	15	—	1 Positive.
	1937	9	77	33.76	9	—	8	—	1	—	9	6	8	8	—	
Aughton Christ Church	1932-36	45	140		6	—	44	38	1	1	17	—	17	17	—	
	1937	31	141	36.87	31	—	31	—	—	—	31	—	11	10	—	1 Positive.
Bickerstaffe C.E.	1932-36	141	146		2	2	131	131	8	8	104	—	30	29	—	1 Positive.
	1937	17	150	67.33	17	—	14	—	3	—	17	—	8	8	—	
Bispham Free Grammar.	1932-36	37	53		1	—	34	33	3	3	9	—	22	22	—	
	1937	10	54	51.85	10	—	10	—	—	—	10	—	6	6	—	
Haskayne C.E.	1932-36	37	31		1	1	33	33	3	3	9	6	18	18	—	
	1937	3	31	54.83	3	—	3	—	—	—	3	—	4	4	—	
Halsall C.E.	1932-36	128	212		11	—	112	101	16	16	52	—	60	60	—	
	1937	14	225	36.88	14	—	13	—	1	—	14	—	16	16	—	
Hesketh Bank C.E.	1932-36	31	72		—	—	30	30	1	1	7	—	24	24	—	
	1937	16	80	40.00	16	—	15	—	1	—	16	—	—	—	—	
Ince Blundell R.C.	1932-36	57	45		—	—	51	51	6	6	28	—	24	24	—	
	1937	7	48	83.33	7	—	7	—	—	—	7	—	5	5	—	
Lydiate R.C.	1932-36	56	75		—	—	52	52	4	4	14	—	32	32	—	
	1937	10	62	74.19	—	—	9	9	1	1	10	—	10	10	—	
Lydiate C.E.	1932-36	43	71		6	—	42	36	1	1	9	1	25	23	2	
	1937	5	73	23.28	—	—	5	5	—	—	4	1	8	8	—	
Maghull C.E.	1932-36	181	413		19	—	176	157	5	5	54	—	84	76	7	1 Positive.
	1937	49	512	30.07	3	1	46	42	2	4	49	—	43	43	—	
Maghull R.C.	1932-36	48	58		3	—	41	38	7	7	28	—	20	20	—	
	1937	3	79	22.70	—	—	3	3	—	—	3	—	—	—	—	
Melling C.E.	1932-36	81	93		2	—	81	79	—	—	16	23	31	30	1	
	1937	13	100	48.00	13	—	11	—	2	—	13	—	11	11	—	

IMMUNISATION AGAINST SCARLET FEVER AND DIPHTHERIA—(*continued*).

Melling R.C.	1932-36	40	56		—	—	40	40	—	—	5	—	22	22	—	
	1937	5	56	55.35	5	—	5	—	—	—	5	—	13	13	—	
Netherton R.C.	1932-36	78	91		8	1	71	64	6	6	38	—	48	38	5	5 Positive.
	1937	7	93	20.43	—	—	7	7	—	—	7	—	—	—	—	
Rufford C.E.	1932-36	38	81		—	—	36	36	1	1	7	—	19	19	—	1 had no injections.
	1937	6	69	34.78	6	—	6	—	—	—	6	—	11	10	1	1 Positive.
Rufford Methodist	1932-36	22	47		—	—	22	22	—	—	5	—	12	12	—	
	1937	8	52	44.23	8	—	8	—	—	—	8	—	5	5	—	
Banks St. Stephen's	1932-36	24	129		—	—	24	24	—	—	6	3	13	10	1	2 Positive.
	1937	3	109	10.09	3	—	2	—	1	—	3	—	2	2	—	
Banks Methodist	1932-36	7	136		—	—	4	4	3	3	7	—	—	—	—	
	1937	—	138	3.62	—	—	—	—	—	—	—	—	—	—	—	
Scarisbrick Township	1932-36	8	40		—	—	8	8	—	—	7	7	1	1	—	
	1937	4	41	9.75	4	—	4	—	—	—	4	—	—	—	—	
Scarisbrick C.E.	1932-36	33	58		—	—	31	31	1	1	9	11	1	1	—	1 had no injections.
	1937	11	58	43.10	—	—	11	11	—	—	11	—	11	11	—	
Scarisbrick R.C.	1932-36	67	119		—	—	63	63	4	4	23	—	31	31	—	
	1937	11	118	32.20	—	—	11	11	—	—	11	—	13	12	—	1 Positive.
Sefton Council	1932-36	72	69		—	—	61	61	6	6	34	1	26	26	—	2 had no injections, 3 immune by preliminary test.
	1937	9	55	58.00	9	—	8	—	1	—	9	—	9	8	1	
Tarleton Mere Brow	1932-36	46	45		—	—	36	36	9	9	21	4	18	18	—	1 Immune by preliminary test.
	1937	10	36	72.22	—	—	9	9	1	1	10	—	2	2	—	
Tarleton C.E.	1932-36	24	100		—	—	20	20	4	4	5	9	10	10	—	
	1937	22	102	31.37	22	—	22	—	—	—	22	—	—	—	—	
Tarleton Council.	1932-36	44	247		3	—	42	39	1	1	16	—	27	26	—	1 Positive, 1 immune by preliminary test.
	1937	39	224	31.25	39	—	32	—	7	—	39	—	—	—	—	
TOTALS	1932-36	1434	2699	32.93	66	4	1332	1268	91	91	547	70	631	604	16	
	1937	322	2783	40.36	219	1	300	97	21	6	321	7	196	192	1	

	Pre-School children.	Children attending Schools elsewhere.	Scarlet Fever Patients in Hospital immunised against Diphtheria.	Adults.
1932-36	75	10	32	2
1937	73	4	17	—

TOTAL NUMBER OF PERSONS COMPLETELY IMMUNISED AGAINST DIPHTHERIA ... 1,845

ENTERIC AND PARATYPHOID FEVERS.

Two cases of paratyphoid fever admitted in January were proved to have been infected outside the district, at a time when this disease was epidemic. In one case the disease was complicated by femoral thrombosis. One case of enteric fever had been infected from a carrier who had moved into the district from a town and had not previously been discovered. This case also suffered from femoral thrombosis and was in hospital for three months. He was removed to his home by ambulance to the care of his private doctor. The carrier is under careful observation.

A further mild case of paratyphoid fever was admitted in September and made an uninterrupted recovery. The source of infection was never traced. No further cases have occurred which could be attributed to the same source. Ice cream sold by an itinerant vendor was under suspicion but exonerated after analysis.

A schoolboy suffering from paratyphoid fever was admitted during the same month. He had been infected from another case in a general hospital outside the district, and bore no relationship to the above-mentioned case. He was discharged cured after a stay in hospital of two months.

One case of **Brucella Abortus** infection made a rapid recovery in hospital. At the same time one other case had been discovered in an adjoining district. This latter patient had been consuming milk supplied from the West Lancashire Rural District.

No further cases occurred, and despite much effort the source of infection was not traced. All milk supplies which could be suspected were proved negative on bacteriological examination.

The organism was not found in any samples taken, and the blood of the animals inoculated with these samples showed no agglutinin for **Br. Abortus** six weeks after inoculation.

MEASLES.

The number of cases notified during 1937 was 115—48 more than the number for 1936.

This figure includes notifications of German Measles which latter disease was prevalent throughout the first half of the year in the area to the south of Ormskirk.

Measles itself broke out in Banks and Tarleton at the end of July and was prevalent for little more than a month, but in September

cases began to be notified from Halsall and Scarisbrick, an apparent extension from Southport. Forty-eight of the eighty cases occurred during the last quarter of the year, nearly all to the north of Ormskirk.

Measles is commonest in urban districts. It is not compulsorily notifiable in the Rural District, and the Department is dependent on weekly reports from School Attendance Officers, and voluntary notifications from parents and practitioners.

Fatality from measles is almost invariably due to the common complication—broncho-pneumonia. There were no deaths from the disease during the year.

Table 1.

	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Cases	306	140	54	167	5	4	27	57	36	67	115
Deaths	1	—	1	3	—	—	—	2	1	—	—
Case rate per 1000 inhabitants	13·3	6·1	2·3	7·2	0·22	0·15	1·02	2·09	1·25	2·12	3·55
Death rate per 1000 inhabitants	0·04	—	0·04	0·12	—	—	—	0·07	0·03	—	—
Fatility rate per 100 cases	0·3	—	1·8	1·8	—	—	—	3·52	2·77	—	—

MEASLES.

Deaths and death rates per 1,000 of the population from 1890 to 1937 :—

Table 2.

Year	Deaths	Rates per 1000	Average for 10 years	Year	Deaths	Rates per 1000	Average for 10 years
1890	20	0·78	—	1914	1	0·04	—
1891	—	—	—	1915	3	0·14	—
1892	3	0·07	—	1916	—	—	—
1893	5	0·15	—	1917	—	—	—
1894	8	0·30	—	1918	1	0·05	—
1895	5	0·19	—	1919	—	—	0·06
1896	2	0·05	—	1920	2	0·10	—
1897	5	0·19	—	1921	—	—	—
1898	5	0·25	—	1922	1	0·04	—
1899	7	0·35	0·23	1923	1	0 04	—
1900	2	0·07	—	1924	—	—	—
1901	—	—	—	1925	1	0·04	—
1902	1	0·04	—	1926	—	—	—
1903	2	0·07	—	1927	1	0·04	—
1904	9	0·44	—	1928	—	—	—
1905	—	—	—	1929	1	0·04	0·03
1906	3	0·14	-	1930	3	7·2	—
1907	3	0·14	—	1931	—	—	—
1908	—	—	—	1932	—	—	—
1909	2	0·09	0·09	1933	—	—	—
1910	2	0·09	—	1934	2	3·07	—
1911	2	0·09	—	1935	1	0·03	—
1912	2	0·09	—	1936	—	—	—
1913	4	0·19	—	1937	—	—	—

WHOOPING COUGH.

Whooping Cough is generally considered to be epidemic every two years, but in the Rural District 1936 and 1937 have proved the exception to the rule as it has been prevalent during both years.

Even though it is not notifiable, 76 cases were notified to the Department and 87 in the previous year.

It is noteworthy that all the 76 cases were children attending school. Five cases occurred at the Maghull C.E. School at the beginning of the year, probably an extension from 1936. There were eight cases reported from Rufford C.E. School in February but it was not until the end of August that Whooping Cough was again heard of.

From then until the end of the year the disease was confined to Maghull, Lydiate and Melling with the exception of five cases amongst the children attending the Aughton Parochial School.

It is impossible to report with precision upon a disease which is notifiable only on a voluntary basis.

Whooping Cough is extremely fatal during the first two or three years of life, and it is of the utmost importance that infants should be protected against all possible sources of infection.

There was one death from this disease during 1937.

The Infants' Department of the Maghull C.E. School was closed from November 22nd to the end of the year owing to the prevalence of Chickenpox and Whooping Cough.

MALARIA INDUCED FOR THERAPEUTIC PURPOSES.

The Public Health (Infectious Diseases) Regulations, 1927, provide inter alia, " that a medical practitioner shall not be required to notify to the Medical Officer of Health of the District a case of malaria occurring in an institution in which the condition has been induced for therapeutic purposes; but at least four days before the discharge of the patient from the institution the medical practitioner in whose charge he has been shall, if he is of opinion that the patient may be regarded as liable to relapses of malaria, notify the case to the Medical Officer of Health of the District in which the patient proposes to reside in the form and containing the particulars set forth in the second schedule of these Regulations."

Such notifications are from time to time received, but there were none during 1937.

CANCER.

Deaths from Cancer, showing parts of the body affected, 1937:—

Organs affected	M	F	Total.
Breast	—	1	1
Stomach...	4	7	11
Bowel	2	4	6
Rectum	1	—	1
Oesophagus	—	1	1
Tongue	—	1	1
Liver	2	2	4
Lung and Mediastinum	5	3	8
Prostate	2	—	2
Bladder	1	—	1
Uterus	—	2	2
Bone	1	2	3
Cerebral	1	—	1
Neck	1	—	1
Eustachian Tube	—	1	1
	20	24	44

Age Incidence.

Age below ...	5	20	30	40	50	60	70	80	90	90 up
	—	—	2	3	5	11	7	15	1	—

DEATHS FROM CANCER.

During 1937 there were forty-four deaths from cancer and other malignant disease. This represents a death rate of 1.05 per 1,000 as against 1.28 in the previous year.

In 1890 the death rate from cancer in West Lancashire was only 0.35 per 1,000. The alarming increase in the death rate during the last forty years may in part be due to improved diagnosis having brought to light many cases which years ago would have remained undiscovered. Still, it must be remembered, that superficial cancers such as those of the skin, tongue, breast, etc., would have been recognised as such by even the last generation but one. So we must assume that there is a " net " increase of cancer deaths of a disquieting magnitude.

In England and Wales the recorded mortality has trebled in two generations.

Owing to the frequent cancerous affections of the breast and female generative organs it is usual for the deaths of females to be in excess of the males, but in the parts of the body common to both sexes males are usually more frequently affected than females.

PUERPERAL FEVER AND PYREXIA.

One case of puerperal pyrexia was notified during the year, but was not removed to hospital. The patient recovered.

MATERNAL MORTALITY.

Towards the end of 1928, a questionnaire was issued by the Maternal Mortality Committee of the Ministry of Health, seeking from Medical Officers of Health full particulars of every maternal death occurring in their district.

Information is collected from relatives, the attending practitioners, medical superintendents of hospitals medical officers of clinics, midwives and health visitors.

Two maternal deaths were registered during the year, one due to puerperal sepsis and the other due to eclampsia.

TUBERCULOSIS.

Summary of notifications under the Public Health (Tuberculosis) Regulations, 1930, received during 1937:

Age Periods	New Cases				Deaths			
	Respiratory		Non-respiratory		Respiratory		Non-respiratory	
	M	F	M	F	M	F	M	F
0—1 ...	—	—	—	—	—	—	—	—
1—5 ...	—	—	2	1	—	—	—	1
5—10 ...	—	—	—	1	—	—	—	—
10—15 ...	—	—	—	1	—	—	—	—
15—20 ...	1	3	—	—	—	1	—	—
20—25 ...	1	7	2	—	—	4	—	—
25—35 ...	7	3	—	3	1	1	—	—
35—45 ...	—	2	—	—	—	1	—	—
45—55 ...	2	1	—	—	2	1	—	—
55—65 ...	—	2	—	—	2	—	—	—
65 & upwards	—	—	—	—	—	—	—	—
Totals ...	11	18	4	6	5	8	—	1

NOTIFICATIONS ON FORM 1.

	Public Assistance Hospital	Sanatoria and Pulmonary Hospitals	General Hospitals
Pulmonary—			
Male	—	8	—
Female	—	9	—
Non-pulmonary—			
Male	—	1	—
Female	—	—	—

Schedule A is used by practitioners on first becoming aware that a patient is suffering from tuberculosis, unless he has reasonable grounds for believing that the case has already been notified.

Form I is for the use of Medical Officers of Public Assistance Hospital and Sanatoria, etc., and applies only to cases which have been previously notified under Schedule A, before admission to their institution.

Form II is the form of notification of discharge of a patient from a Public Assistance Hospital or Sanatorium.

Eight pulmonary males and nine pulmonary females were notified on Form 1. One non-pulmonary male was notified on Form 1.

Seven pulmonary males and seven pulmonary females were notified on Form 2; also four non-pulmonary males and two females.

Thirty-nine notifications were received under Schedule A, twelve more than the figure for 1936.

Of these thirty-nine cases, twenty-nine were pulmonary (eleven males and eighteen females) and ten were non-pulmonary (four males and six females).

There were fourteen deaths from pulmonary tuberculosis (five males and eight females). There was one death from non-pulmonary tuberculosis (female).

Notification of tuberculosis is very satisfactory.

Dispensary and sanatorium treatment is administered by the appropriate department of the Lancashire County Council, who also provide open-air shelters for chest cases in the Rural District, as requested.

Of the thirty-nine cases of all forms of tuberculosis which came under the notice of the department for the first time during the year, only three of the male pulmonary cases were engaged on out-door work.

Occupation	Pulmonary		Non-Pulmonary	
	Males	Females	Males	Females
Typist	—	—	—	1
Clerk	4	3	—	—
Housework	—	7	—	2
No occupation ...	2	2	1	—
Boarding house keeper	—	1	—	—
Farmer	1	—	—	—
Gardener	1	—	—	—
Machinist	—	1	—	—
Pattern Maker ...	1	—	—	—
Infant	—	...	2	1
Joiner	—	—	1	—
School	—	1	—	2
Shop Assistant ...	—	1	—	—
Confectioner ...	—	1	—	—
Labourer	1	—	—	—
Nun	—	1	—	—
Motor Driver ...	1	—	—	—

The above table is an analysis of the occupations of the thirty-nine new cases notified during 1937.

In twenty-four houses inspected during the year by reason of tuberculous inmates, nine cases were found not to be sleeping in separate bedrooms and seven of these not even in separate beds.

INFLUENZA AND OTHER RESPIRATORY DISEASES.

Influenza was not abnormally prevalent during the year under review. Twenty-seven cases of pneumonia were notified as against thirty-three cases in 1936. In twelve cases the pneumonia was associated with influenza.

Acute primary and acute influenzal pneumonia are alone notifiable but all forms are included in the death rate from that disease.

The total deaths from influenza and other respiratory diseases other than tuberculosis) during the year numbered thirty-eight, the figure for 1936 being twenty-seven and for 1935 thirty-two. Of these deaths eighteen were due to pneumonia.

ENCEPHALITIS LETHARGICA.
(Epidemic Encephalitis).

One new case was notified during the year and died. Despite exhaustive enquiries it was not found possible to trace the source of the disease nor did the patient transmit the disease to others.

The incidence and mortality since the inauguration of compulsory notification are shown in the following table:—

Table 1.

	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Cases	—	1	5	4	2	6	1	1	—	1	—	—	—	—	—	1
Case Rate per 1000 of population...	—	0·05	0·22	0·18	0·09	—	0·04	0·04	—	0·04	—	—	—	—	—	0·03
Deaths ..	—	—	3	1	2	3	1	1	1	2	1	1	1	1	—	2
Death rate per 1000 population...	—	—	0·14	0·045	0·09	—	0·04	0·04	0·04	0·08	0·04	0·04	—	0·03	—	0·06
Fatality rate per 100 cases	—	—	60	25	100	50	100	—	—	—	—	—	—	—	—	—

Table 2.

Ages of Cases and Deaths, 1919-1937.

Age	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and up	Total
Cases	—	—	1	2	1	2	4	5	5	4	3	27
Deaths	—	—	—	1	—	2	4	1	3	1	3	15
Fatality %... ..	—	—	—	50	—	100	100	20	60	25	100	55·55

SOUTHPORT'S WEATHER IN 1937.

DULL, MILD, CALM and DRY.

The most noteworthy meteorological feature of the year, though quite un-noticed by the ordinary individual, has been the remarkable prevalence of north-westerly winds, which not only surpassed those from any other octant, but have probably only once been exceeded since the Marshside Anemograph Station was established in the year 1898. Undoubtedly associated with these conditions has been the scarcity of thunderstorms of any severity, and the smallness of the atmospheric pollution returns month by month.

TEMPERATURE OF THE AIR.

1937	Mean Temperature. °	Difference from the Average. °	Absolute Extremes. Max. °	Min. °
January	41.7	+1.5	56	25
February	41.9	+1.8	53	31
March	39.1	—2.9	56	26
April	48.4	+2.5	62	31
May	53.3	+1.6	75	35
June	56.9	+0.6	70	39
July	60.5	+0.7	77	46
August	61.6	+2.1	82	44
September	56.2	+0.3	74	40
October...	50.4	+0.2	67	33
November	42.0	—1.2	57	25
December	37.7	—3.2	55	23
The Year	49.1	+0.3	82	23

No new records of temperature, either high or low, were created during the year. March, 1936, was particularly warm, though this year it was the coldest since the years 1917 and 1919. Nine months had mean temperatures above their averages, in spite of the continued dullness; nevertheless, the day maximum temperature only exceeded 80 degrees on one occasion, when 82 degrees was recorded on August 2nd (Bank Holiday). Real Summer conditions did not set in until the end of July, and then continued throughout an ideal Autumn. The final month of the year being of a more wintry type, the ultimate mean for the year, 49.1 degrees, was only 0.3 degrees above the 65 years' average, and has thus not broken the unparalleled series of six successive years, with mean temperatures above the average. The lowest temperature this year on the ground, 15 degrees, was recorded on December 10th.

BRIGHT SUNSHINE.

1937	Duration of Sunshine. Hours.	Difference from the Average. Hours.	Number of Sunless Days.
January	32·1	—12·9	15
February	60·7	— 5·8	11
March	106·0	—13·9	6
April	117·7	—49·4	4
May	207·5	+ 2·8	1
June	168·5	—45·2	1
July	134·8	—66·1	2
August	182·9	+ 6·3	0
September	143·3	+ 4·4	2
October	81·9	—15·4	9
November	70·4	+15·5	12
December	38·1	+ 2·2	11
Year	1343·9	—177·5	74+5

For the second year in succession a very decided deficiency of sunshine has to be recorded. April, June and July were particularly dull, while November was the sunniest month compared with its average. June 15th was the sunniest day, with 15.2 hours, and August was the only month without a sunless day. The 40 years' sunshine average at Southport is 1,521.4 hours. 1937 has only recorded 1,343.9 hours, the year's defiiciency thus being no less than 177.5 hours. 1936 and 1937 together totalled 2,675 hours. The only similar coincidence of two consecutive dull years in the local records were 1912

and 1913, with 2,644 hours, only 31 hours less than 1936 and 1937. Absolutely the dullest year locally was 1,277 hours in 1920. As in 1936, May was again the sunniest month of the year. The number of sunless days was only five more than the average.

RAINFALL.

1937	Total Rainfall (Hesketh Park) Inches.	Difference from the Average Inches.	Number of Days with Rain.
January	1·63	−1·17	19
February	4·17	+2·08	21
March	1·38	−0·78	18
April	2·85	+1·03	16
May	1·90	−0·28	10
June	1·87	−0·36	12
July	1·66	−1·29	15
August	1·54	−2·10	9
September	1·91	−1·25	15
October	2·42	−1·40	12
November	1·45	−1·82	10
December	2·22	−0·96	16
YEAR	25·00	−8·30	173

This has been one of the driest years in the local records, which commenced in 1871. Only two months, February and April, yielded more than the average. The total for the year was only 25.00 inches, or 8.30 inches below the 65 years' average. The largest deficiency arose in August, normally the month with the heaviest rainfall locally. There were two absolute droughts during the year (namely, 15 consecutive days without precipitation). The first terminated on August 9, 15 days; the second occurred in October, a period of 19 consecutive days, thus being a record for this particular month. A marked feature of the year has been the scarcity of heavy falls of rain in short periods, the heaviest being 0.83 inch on August 13. The number of days with rain was decidedly below the average; only 9 days, with a duration of 18½ hours, occurred in August. The continued deficiency during the last nine months was definitely shown by the unprecedented low level of the subsoil water, which may prove serious to vegetation in the ensuing year.

WIND MOVEMENT.

Wind movement at Marshside was made noteworthy by the almost unprecedented calmness of August and the month of November, the latter being the calmest of its name since the Anemograph Station was established in 1898. The first two months were the only ones at all windy, and the absence of any velocities reaching gale force after March was quite unique; an event demonstrated by the abundant and beautifully tinted foliage during one of the most pleasant Autumns on record. A notable feature was also the absence of either Spring or Autumnal equinoctial gales; the largest wind movement on one day was 842 miles on February 20 and 28. The highest momentary gust recorded during the year was 71 miles per hour on the latter date. During the year, the hours of wind from North and North-West were quite phenomenal, amounting to 2,351.5 hours, a total probably only twice exceeded locally. The year will also rank as one of the calmest on record locally.

Acknowledgment is due to Mr. Alfred Goodwill, F.R.Met.Soc., who has recently retired from his position as Meteorologist to the Southport Corporation, for the above information.